

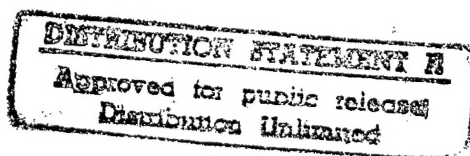


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JPRS Report

Environmental Issues

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Environmental Issues

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**G-7 Will Finance Safety for Nuclear Power Plants
in Europe**

*LD2901121593 Berlin ADN in German 1056 GMT
29 Jan 93*

[Text] Bonn (ADN)—The group of seven leading industrialized states (G-7) has agreed to set up a fund to improve the safety of nuclear power stations in Central and Eastern Europe. The fund should initially total 60 million ECU's (120 million Deutsche marks [DM]) and be made part of the European Bank for Reconstruction and Development in London, Federal Environment Minister Klaus Toepfer told journalists in Bonn today. The 1993 federal budget already includes DM21 million as Germany's contribution.

The establishment of the multilateral fund was decided last July at the G-7 summit in Munich. Toepfer explained that it is to be increased over the next few years. He did not give any specific figures. The increase will depend on the requests made by the countries. Toepfer added that Sweden, Finland, Switzerland, and Austria will also be invited to take part in the fund.

The fund is not a "program of stabilization" for the nuclear power stations built to Russian specifications, Toepfer said. Rather, it serves to maintain safety standards for the old nuclear power stations through short-term measures until a fundamental restructuring of those countries' energy supply is carried out.

SOUTH AFRICA

Smokeless Coal To Be Produced From Colliery Discards

93WN0207K Johannesburg *ENGINEERING NEWS*
in English 27 Nov 92 p 26

[Unattributed report: "Smokeless Coal From Discard Could End Township Smog"]

[Text] Research conducted by professor David Horsfall at the University of the Witwatersrand, and supported by the Department of Mineral and Energy Affairs, in association with the United Carbon Producers, has revealed that a potentially low-cost smoke-reduced fuel may be produced from colliery discards.

Discard is the below standard coal that is split off when coal is washed at different densities to form low ash, medium ash and discard. Essentially export coal requires products of low/medium ash because of the high transport charges and as a consequence, highly combustible, but fairly high ash coal is discarded.

By rewashing the discards, that combustible fraction may be washed out. The discards are then heated to divest it of the tar-forming volatile constituents and once this is complete a smokeless fuel or one that produces only 15% the amount of smoke of normal coal is produced.

Tests on rewash discards showed that by heating them to about 600°C for a period of three hours, it could be processed to give a fuel with ignitability a little inferior to that of bituminous coal, a somewhat slower heating rate to maximum heat output, but thereafter a strong and steady heating effect virtually akin to anthracite and in addition the fuel was virtually smokeless.

A smokeless fuel could play a decisive role in reducing the air pollution in Soweto, as there is no doubt that the major cause of smoke found in such areas is primarily caused by coal burning.

Because of the financial incentive it was evident to the Wits research programme that a smokeless alternative to coal would have to be in a similar price range. Thus the feedstock and heat treatment process will have to be cheap because these processes might price the product out as a viable alternative.

Naturally smokeless fuel, anthracite, occurs in South Africa but because of the cost of mining, transport, and the competing demands of the local industrial and the export market, this fuel retails at a cost over double the cost of bituminous coal.

The Wits programme found a cheap feedstock for their research in the colliery discards. Waste heat from existing industrial processes was used to rid the discards of the smoke producing element and at the same time keep the cost down.

An exercise completed by the Department of Mineral and Energy Affairs found that the cost of recovering a washed product would be in the order of R5/ton for 20 MJ/kg product, and R3 for 16 MJ/kg. Depending on what charge would be made by the mines for material that at present is

dumped, the cost/ton would be less than R10. This compares with a mine price of R40-45 for coal with a calorific value about 24 MJ/kg.

The second stage of the operation is to heat the coal to remove the pollutant qualities, but heat treatment is an expensive process particularly if the end product has to carry all the cost.

In such a scenario the research programme estimated that a ton of conventionally produced smokeless fuel would cost around R100/ton.

By using rewash discards, the plant price could be about R50/ton depending on the price charged for the waste material. This price could be further reduced if waste heat from an existing industrial process was used to heat the discards.

A possible source for this heat is the by-product heat from the operation of producing the metallurgical reductant known as char. It is possible to burn off the volatile constituents of the coal but leave carbon residue and mineral matter behind.

Research has reached the stage of producing the fuel in small amounts by commercially available processes and submitting it to field trials.

In the Wits test the fuel was tested against SABS [South African Bureau of Standards] approved coal cooking standards and in all respects passed the required standards. Smoke emission was about 15% of the smoke produced from coal and this usually vanished after 15 minutes. It was noted that the fuel although ignited in the usual way, took at least an hour to take hold, but once ignited it gave a steady heat output.

In the township test users were asked to fill in a comprehensive questionnaire about the fuel. Initial comments were that the fuel was slow to ignite, but was smokeless and burned with a hot flame.

Aerosol Manufacturers Take Steps To Protect Ozone Layer

93WN0207E Johannesburg *ENGINEERING NEWS*
in English 27 Nov 92 p 15

[Unattributed report: "Aerosol Manufacturers Take the Ozone Layer Into Account"]

[Text] Since the discovery of the harmful effects of CFC's on the ozone layer, environmentally conscious aerosol manufacturers have been using ozone friendly propellants in their products.

The most popular alternative to the old generation CFC's is a blend of butane and propane, as manufactured by Puregas.

Based in Johannesburg, the company supplies products to customers around the country via road and rail, as well as supplying products to Zimbabwe.

"The rest of the southern African market is virtually inaccessible, given the type of transportation that is involved with this product; however there are possibilities for Mozambique if they can maintain their negotiated peace" says GM Gavin Tennant.

The propane and butane blends are used in a wide range of aerosol formulations, where particular attention has to be paid to the removal of the smallest traces of odour-causing compounds.

The gases contain unsaturated hydrocarbons which are the major source of odour and are required to be removed for use in personal care and cosmetic applications.

In contrast to other undesirable compounds which are present in parts per million, unsaturated hydrocarbons may exist in low concentrations in some of the commercial grades of butane.

With the development of the hydrogenation plant it was now possible to react the feedstock from the various suppliers to make it suitable for use in all grades of propellant.

The plant is designed to react the unsaturated hydrocarbons with hydrogen to convert them to saturated hydrocarbons over a palladium catalyst in a specially designed reactor.

A unique feature of the process ensures that the volume of hydrogen mixed with the gas is precisely the correct amount to react with the unsaturated hydrocarbons in the raw feed.

The plant is the first of its kind in South Africa and the application of this technology has made it possible to treat previously unsuitable feedstock and therefore improve the reliability of supply of pure product to the aerosol industry.

Another advantage of the butane and propane mixture is that the propellant is less expensive than the old CFC product.

The mechanical and process design was performed in-house, with plant construction and erection being done by Product Erection and electrical and instrumentation design and construction by NIC Engineering, which amounted to a capital investment of R1-million.

Eskom Considers Desulphurization Costs

*93WN0207B Johannesburg ENGINEERING NEWS
in English 27 Nov 92 p 14*

[Unattributed report: "Desulphurisation Is an Expensive Luxury"]

[Text] The relationship between Eskom and a whole spectrum of environmental issues is currently very much a matter of concern. This is inevitable as the South African public is reacting to the same pressures that have forced these issues into the forefront internationally, says an Eskom spokesperson.

However in considering environmental issues in South Africa, it is important to take into account the special circumstances that are unique to this country.

As an example, it is clear that there is a need for industrial expansion to produce meaningful employment for the people who currently live below the poverty line. On the other hand, air quality should not be permitted to deteriorate beyond limits conducive to permanent environmental damage.

South Africa has one of the largest industrialised economies in the southern hemisphere and is the most industrialised regional power. Thus, unlike the situation in Europe, there is little potential for importing air pollution from neighbouring countries.

Furthermore current levels of air pollutants in the eastern Transvaal highveld (ETH), where most of the Eskom power stations are situated, are generally far below international guideline levels.

There is currently an increasing call for first world solutions to local problems, even though there may be no scientific or economic rationale behind this argument.

For instance it can be shown that the cost of desulphurisation would add some 20% to the overall costs of generating electricity over the lifetime of a power station. In capital terms, this amounts to an additional outlay of some R1,000-million on a 3600 MW station even before running cost penalties are considered.

In terms of national priorities, the potential gains should be compared with those obtained from investing the same amount of capital into other projects. Such a project requiring immediate priority, is the electrification of all black residential areas. Pollution in these areas far exceeds that found in the ETH.

An amount of R1,000-million would provide electricity to about 420,000 homes. This represents a township equal in size to Sharpeville and Sebokeng in the Vaal Triangle combined.

It is not feasible to eliminate township emissions completely due to cost of appliances and traditional practices. However, a 75% reduction seems a realistic target and this figure was used to estimate the potential improvements.

The effect would be to reduce the sulphur dioxide and particulate concentrations in the township by about 64% of existing levels. By contrast fitting desulphurisation to one of the ETH power stations would have minimal benefits.

The rainfall acidity would decrease by 2,3% which represents an increase in pH value of 0,01 and the annual mean sulphur dioxide concentrations could decrease about 6,9% which is about 0,7ppb. These changes are insignificant.

In addition, the population of the entire rural ETH area is under 200,000 and existing pollution levels do not pose health risks. It is quite clear that township electrification would yield substantial benefits both in cost and community terms.

On the other hand, the desulphurisation of the ETH power stations must be considered an expensive luxury which would have no discernable impact on air quality.

In addition air flows over the ETH are generally favourable for the dispersion and dilution of fumes emitted from tall stacks. Conditions are only unfavorable for the dispersion of pollutants emitted at ground level, such as township smoke, burning coal discard dumps and industries with short stacks.

Regional sulphur dioxide concentrations are low and NO_x concentrations are very low. Local pollutant levels in densely populated urban areas are unacceptably high. The

tall stacks fitted to Eskom power stations are very effective in limiting ground level concentrations of sulphur oxides and nitrous oxides.

Acidity levels in South African rains are similar to those found overseas, however local inland rain has a naturally high background acidity. The ETH power stations are responsible for lowering the mean pH value by less than 0.1 pH unit.

Sulphate and nitrate deposition values are much lower than those overseas. Thus there is no immediate acid rain problem in South Africa.

The other benefits of electrification are the net energy cost and emission benefits of electricity over alternative fuels for common household activities like cooking and space heating.

It should be noted that smokeless fuels may offer a partial solution to the problem of air pollution in townships. However, while smokeless fuels may be effective in reducing particulate concentrations, the question of sulphur dioxide emissions will still remain.

Official Views Country's Air Pollution Control Options

93WN0207A Johannesburg *ENGINEERING NEWS* in English 27 Nov 92 p 13

[Interview with Gordon Grange, Executive director of the National Association of Clean Air (Naca) by Greg Osborn, *ENGINEERING NEWS* staff writer: "SA Tackles the Issue of Air Pollution Control"]

[Text] Which region in South Africa is the worst hit by air pollution and what are the sources of this pollution?

The worst hit area in terms of air pollution is the PWV [Pretoria, Witwatersrand Vereeniging], due to the large concentrations of population and industry.

According to the Draft Air Pollution Control Policy, Boksburg has the highest concentrations of sulphur dioxide in the country during winter.

The Eastern Transvaal Highlands is second on the list, with pollution coming from the large Eskom thermal power stations and other industries in the area.

Third on the list is Durban and, while it suffers from the same kinds of pollution as the PWV, it has higher concentrations of lead in the air.

Cape Town's major source of pollution is from motor vehicles, which on occasion cause a photo-chemical brown haze over the city. This city has the highest levels of lead concentrations in the country.

Smoke from coal fires has been highlighted as one of the major pollutants on the PWV. What types of smokeless fuels are there and how much more expensive are they when compared to existing fuels?

At this moment in time there is only one smokeless fuel on the market and that is anthracite.

This could considerably reduce smoke from coal fires. However, anthracite is almost double the price of normal coals and given the current economic climate, is not a likely alternative.

Wits University's Prof David Horsfall is looking at the feasibility of another smokeless fuel.

Electricity Capacity

Electrification of townships is another way of reducing coal fires; can Eskom's current capacity meet the country's requirements?

Eskom could electrify the whole of South Africa with its existing capacity; however, I can't see electricity replacing coal fires, given the current economic circumstances. Coal fires are cheaper and do a better job of heating up formal or informal housing.

If power stations had to increase their output to meet the country's demands would this not increase the already acidic nature of rain in the atmosphere and adds to the warming of the environment?

The tall stack method emits SO and NO gases into the upper atmosphere which dilutes and disperses their effects.

However an increase in output would increase these gases in the atmosphere and increase the propensity for acid rain and add to the greenhouse effect, but power stations are not the only contributors to this phenomena; biomass burning also increases the possibility of acid rain and emits NO gases into the atmosphere.

Apart from the winter months, South Africa deals with the dispersion of SO and NO from tall stacks quite adequately.

What damage do particle emissions, if unchecked, do to the environment and which cause the greater harm to the environment, gases or particles?

Particles do more damage to man as they can penetrate into the lungs.

In the Vaal Triangle the emissions exceed the health standards and research done by the CSIR [Council for Scientific and Industrial Research] and the Medical Research Council shows 66% of children in this area suffer from upper respiratory disease; however the area also has a high pollen count, which can contribute to respiratory problems.

Sulphur dioxide in low concentrations is normally not a concern to man.

One theory still being researched however, is that given the high number of respiratory problems this means that noses become blocked and therefore a large number of people are "mouth breathers," thus the sulphur in the air which is normally scrubbed out in the nose can penetrate into the lungs.

What watchdog ensures that industry or individuals stick to acceptable levels of pollution and how often are they checked? What action is taken against the offender?

All industries are required to install continuous monitors which record their emissions; these records are checked by the Department of National Health and Population Development.

An industry which exceeds the guidelines has to report monthly to the department and will have to submit a programme to reduce the emissions.

In the past all the communication between the department and an offender would not have to be made public, however Naca is in favor of such violations being made public and it was also a recommendation of the President's Council. The dangers of going public, however, are that this new system might retard economic growth.

What suggestions came out of the President Council's report on the Environment and has the concept of accountability been mooted?

The main recommendation that emerged from the Presidents Council was that all South Africa's environmental governmental agencies should fall under one umbrella to ensure clarity and better policing.

The council recommended that environmental impact assessment and environmental management become a regular feature of all environmental protection programmes.

Legislation will be enacted to bring in some form of accountability so as to let the public know what is being done to reduce pollution.

What changes can we expect with the introduction of lead free petrol in 1995?

Lead free petrol will be available in South Africa in 1995 along with what can currently be bought at the petrol pump.

Catalytic converters remove the gases produced by the car, however they can only be used with lead free petrol, leaded petrol would damage the converters.

Although they will be available, I do not think there will be a dramatic switch across to the use of converters, but rather over a period of time.

Ozone Protection

When are CFCs due to be phased out in South Africa and what developments have there been internationally with regards to CFCs?

The National Policy for the Protection of the Ozone Layer states that by January 1993 consumption of CFCs in South Africa must have reduced to 80% of 1986 levels.

The same applies to Halons, while carbontetrachloride, methylchloroform and fully halogenated CFCs must be restricted to 1989 levels.

By the year 2000 all CFC and Halon production must be fully phased out.

Is South Africa the major pollutant on the continent, and what effect do we have on our neighbours' atmospheres?

South Africa is the major polluter on the continent, but we are not high by world standards as we produce only 2% of the world's CFCs, 1% of its sulphur dioxide and 3% of its carbon dioxide.

Most of South Africa's pollution is localised, so it rarely affects her neighbours. The pollution from high stacks in the upper atmosphere tends to be blown out over the Indian ocean, some of it may deposit in Swaziland on its way to the sea.

What are the major sources of indoor pollution and how can they be combated?

Smoking is the main form of indoor pollution but no steps have been taken in South Africa to deal with side stream smoke. Buildings which have their ventilation and air conditioner intakes at ground level also tend to suck motor gases into the building but careful architectural planning can overcome this problem.

ZIMBABWE

UN Project To Encourage Solar Energy Potential

*MB2001194793 Johannesburg SAPA in English
1253 GMT 20 Jan 93*

[Text] Harare, Jan 20 (SAPA)—Zimbabwe is to benefit from a five-year, multi-million dollar United Nations development programme to make solar energy available in rural areas, ZIANA news agency reported on Wednesday [20 January]. The project will be paid for from a global environment fund intended to cut the emission of so-called greenhouse gases by encouraging the use of solar energy. More solar energy in rural areas will also save trees from being cut down for fuel.

Official Claims 'Breakthroughs' in Ocean Pollution Control

HK1501020393 Beijing CHINA DAILY in English
15 Jan 93 p 3

[Article by staff reporter: "Stricter Dumping Law Helps Clean Seas"]

[Text] China saw breakthroughs in oceanographic environmental protection last year, following stricter controls on the dumping of waste at sea, according to a Chinese official in charge of maritime affairs.

"The disposal of radioactive materials is banned in China and there was no serious sea pollution caused by dumping waste in the year past," said Chen Bingxin—deputy-director of the National Bureau of Oceanography—at a news conference on Wednesday.

As shown by results of sea monitoring and appraisals, the country's sea and ocean environment was further improved last year, with water quality being improved, oil pollution being put under control and less contamination from heavy metals, Chen noted.

"The practice of using the sea as a rubbish can has been stopped," he added.

While stressing the importance of sea legislation in promoting China's oceanographic environment and ecological protection, Chen also attributed the progress in oceanographic management to the ongoing and systematic changes which have given more say to local governments on sea affairs.

China has so far designated 52 dumping grounds in its territorial waters, said Chen, adding that the Chinese Government has placed a total ban on dumping waste in international waters.

According to Chen, waste dumped at sea chiefly comprises silt dredged from waterways and a small amount of powdered coal from power stations.

Last year the National Bureau of Oceanography issued 330 licences permitting the disposal of waste. Altogether, 49 million cubic metres of silt and more than 100,000 tons of powdered coal were dumped at sea last year, as disclosed by statistics from the national bureau.

Environmental quality around China's eight offshore petroleum and natural gas fields and 24 offshore exploration platforms has been maintained at a high level. No environmental problems, such as oil spills, occurred last year, according to Chen, the deputy director.

In addition, noted advances were reported in natural reserves in sea and ocean areas. Sea resources such as coral reefs are receiving effective protection from the State following the setting up of 14 sea natural reserves.

Oceanographic services in the public interest also reaped favourable social and economic benefits. The quality of sea weather forecasting has been improved gradually and the forecast services have won praise from people engaged in shipping, aquatic production and in the tourism industry.

Coastal areas were hit by four serious storms last year, especially in August, which affected six provinces and two cities. But losses would have been much heavier if sea

weather forecasting departments had not publicized their forecasts predicting the storms.

Chen admitted that the flow of sewage into the sea and the disposal of solid waste on shorelines is still threatening the country's marine environment.

World Bank, ADB Provide Nearly \$1 Billion for Environment

OW1801173693 Beijing XINHUA in English
1458 GMT 18 Jan 93

[Text] Beijing, January 18 (XINHUA)—China received nearly a billion U.S. dollars of foreign funds last year for the development of environmental protection projects.

According to the Beijing-based CHINA ENVIRONMENT JOURNAL, China got 900 million U.S. dollars in loans from the World Bank and Asian Development Bank last year, as well as eight environmental grants amounting to over eight million U.S. dollars.

The funds will be used in setting up protection schemes in cities including Beijing and Shanghai and the provinces of Liaoning, Shandong, Hebei and Jiangsu.

Under the program the first session of the training for environmental assessment has been completed. Environmental information centers in Shanghai, Dalian and Nantong are under construction, and anti-pollution projects in Qingdao and Tangshan are going smoothly. An anti-air pollution project has also been added in Chengde.

With 25 million U.S. dollars of soft loans from the World Bank, the country will set up the National Environmental Protection Fund.

Local Governments Urged To Stop Environmental Ravages

OW2601132593 Beijing XINHUA Domestic Service
in Chinese 1130 GMT 19 Jan 93

[Text] Beijing, 19 Jan (XINHUA)—In a circular they jointly issued not long ago, the State Environmental Protection Bureau, the Ministry of Forestry, and the Ministry of Public Security said that, during the Spring Festival period, all local people's governments should remind the people not to violate the laws for protecting the environment and wild life, and that they should also organize environmental protection, forestry, and public security authorities to act together to inspect how these laws have been enforced and crack down on all lawless conduct.

During its 24th meeting held on 13 January, the State Council Environmental Protection Committee discussed, and approved in principle, the resolution on intensifying the inspection of the enforcement of the environmental protection law and harshly cracking down on all lawless activities. The resolution says: The inspection project is targeted at cracking down on lawless, environment-related misconduct which endangers people's health and upsets social stability, as well as on misconduct of seriously polluting the environment and poaching, trading, and consuming wild life which the state protects with specific laws. All local people's governments and relevant departments must seriously handle such lawless behavior and use this opportunity to draw up regulations for protecting the

environment and to foster social awareness. The media should also work in coordination with the inspection and demonstrate its supervisory function so as to heighten the people's sense of environmental protection.

Minister on Reform of Forestry Industry

HK3101060093 Beijing CHINA DAILY (BUSINESS WEEKLY) in English 31 Jan-6 Feb 93 p 1

[Report by Wu Yunhe: "Forestry Reform Takes Root"]

[Text] China's forestry industry is to undertake economic reform in an attempt to diversify, says a senior forestry official.

Forestry Minister Gao Dezhan said deepening the economic reform among forestry enterprises is a must this year, as a solution should be found to tackle problems between growing timber consumption and afforestation.

He said projects involving timber processing, paper pulp manufacturing, forest-related foodstuffs, medicine and spice, tourism and farming, are to be the focus of forestry development this year.

Analysts say a diversified economic structure is expected as part of the efforts to improve the economic efficiency among forestry enterprises.

They have to find a way to survive while being solely responsible for their profits and losses.

Thanks to afforestation and consumption controls in the past few years, the country has seen forest coverage and timber resources increase.

Ministry officials noted the timber resources growth rate is now "almost" the same as that of consumption.

Quickening progress in afforestation last year has lifted China's forest coverage up to 13.6 percent from 13.4 percent of the country, ministry statistics revealed.

The Forestry Ministry said about 4.5 million hectares of forests planted last year have been up to the national standard.

To control timber consumption, the government began in 1987 to set quotas for felling of timber trees in national forests. The government also cut production targets of various timber products.

Consequently, consumption of timber resources for commercial purposes decreased from 130 million cubic metres in 1988 to 120 million cubic metres last year.

Now China has 131 million hectares of trees with 10.9 billion cubic metres of storage timber.

The ministry noted the rapid development in forests was a result of the deepening reforms in the country's forestry and strict checking and management.

Scientist Reveals Findings on Antarctic

OW0502134793 Beijing XINHUA in English
0849 GMT 5 Feb 93

[Text] Beijing, February 5 (XINHUA)—A Chinese scientist revealed that there are marked differences between the southeastern and southwestern parts of the Antarctic in terms of ice surface, the cross-sections of snow strata and the contents of hydrogen isotope.

Qin Dahe, research fellow with the Lanzhou Institute of Glaciology and Cryopedology under the Chinese Academy of Sciences, revealed his new findings after two years analysis of the samples and data he collected during his 5,896 kilometer survey tour of the Antarctic in 1990.

He said that the ice surfaces in some coastal areas of the Antarctic peninsula are soft but in other areas the snow rises are sharp and hard, rising as high as more than 30 centimeters.

The differences were caused by the thermodynamic conditions, he said.

Under the same temperature conditions, he revealed, the hydrogen isotope content in the southwestern part of the Antarctic is 40 percent higher than that in the southeastern part. The hydrogen isotope content also changes significantly in a 450 kilometer area at an altitude of 3,500 meters above sea level, he stressed.

Qin also found that different sources of water vapour have a not-to-be-ignored impact on the excessive deuterium content of Antarctic ice and snow.

Program to Phase Out Use of Ozone Depleting Materials Approved

OW0502135193 Beijing XINHUA in English
1044 GMT 5 Feb 93

[Text] Beijing, February 5 (XINHUA)—China's State Council has recently approved a program to phase out the use of materials harmful to the ozonosphere, the GUANGMING DAILY reported today.

The medium- and long-term program was drawn up by 30 experts in cooperation with relevant ministries and departments and the Environmental Science Center at Beijing University.

The program sets out the objective of final reduction of such materials by the year 2010 and the economic policies and technical measures that will help achieve the objective.

The program has been submitted to the United Nations Development Program and will be submitted for discussion at the seventh session of the Multilateral Fund for the Protection of Ozone Layer to be held in early March.

Eight investment and demonstrative projects for reducing the use of ozone layer consumption materials are being implemented in China.

REGIONAL AFFAIRS

Singapore, Indonesia Sign Accords on Water Resources, Industrial Park*BK2901143293 Singapore Singapore Broadcasting Corporation in English 1100 GMT 29 Jan 93*

[Text] Singapore and Indonesia have signed two agreements to develop water resources in Sumatera and an industrial park on Bintan. Under one agreement, water resources in Sumatera's Kampar River basin will be tapped for sale to Singapore. It will allow Singapore to [words indistinct] three million cubic meters of water from the Kampar basin. The water agreement was signed by Singapore's deputy prime minister, Brigadier General Lee Hsien Loong, and Indonesia's coordinating minister for the economy, finance, industry, and development, Mr. Radius Prawiro.

Under the second agreement, a 4,000-hectare industrial park will be developed on Bintan. Two memorandums of understanding were signed between the Singapore Technology Industrial Corporation, Jurong Environmental Engineering, and the Salim Group to develop an industrial estate. The Bintan Industrial Estate, BIA, will be developed to produce textile, woodworking, furniture, plywood, and plastic products. The estate will offer more than 70,000 square meters of factory space and is expected to provide jobs for 5,700 persons. Construction will begin next month and is expected to be completed by the middle of next year. The agreements were signed at the third Indonesia-Singapore Joint Ministerial Committee meeting on economic development of the year.

Gen. Lee told a news briefing that Singapore needs to be aware of competitors and make use of its strength for further development. Only then can it become a competitive alternative to various developing countries in the region. Gen. Lee said investors come here because they like the business environment, the feasibility of new policies, and the lower level of government intervention.

The visiting Indonesian minister, Mr. Prawiro, paid a courtesy call on the prime minister, Mr. Goh Chok Tong, at the Istana [palace] today. Mr. Prawiro, who is here on a four-day official visit, had earlier called on the senior minister, Mr. Lee Kuan Yew.

Asian States View Cooperation on Mekong River Development*BK0602023993 Bangkok BANGKOK POST in English 6 Feb 93 p 6*

[Text] Hanoi—Senior officials of Thailand, Vietnam, Laos and Cambodia yesterday decided to meet in Thailand early in April for talks on a new framework for cooperation in the development of the Mekong River's resources.

The decision was announced at the end of the first session of the working group entrusted with charting a new framework for cooperation with Cambodia's participation after an absence of about 17 years.

The session set October as the target date for settlement of two key issues: principles for the sustainable use of the

river's water resources and institutional and management issues related to the mechanisms of cooperation.

The working group was given guidelines for the formulation of a new cooperation framework under an agreement signed in Hanoi yesterday afternoon by deputy foreign ministers of the four riparian states.

A joint communique setting broad principles for cooperation was a companion to the agreement signed in a ceremony witnessed by the United Nations Development Programme (UNDP) and the diplomatic corps based in this Vietnamese capital.

Vietnam's Deputy Prime Minister Tran Duc Luong was also at the landmark event.

Deputy Foreign Minister Surin Phitsuwan signed the agreement on behalf of Thailand.

His counterparts were Vietnamese Vice-Foreign Minister Nguyen Dy Nien, Laotian Vice-Minister of Agriculture and Forestry Sitaheng Latsaphon, and Cambodia's Ing Kiet, representing the Supreme National Council.

The agreement relegated to history the Interim Mekong Committee which had been set up to continue projects that were possible without Cambodia's participation.

A setting aside of differences between Vietnam and Thailand made the resumption of work under the new arrangement possible.

Yesterday's step forward followed "mutual accommodation" between the two countries, Deputy Foreign Minister Surin said.

Differences between the two had stalled efforts to bring Cambodia back into the fold shortly after the peace agreement was signed in October 1991.

"What has started today (Friday) is the process of consultations, confidence-building, looking for common positions rather than dwelling on differences, in order to take the next evolutionary steps in the cooperation among the four riparian countries," UNDP official Krishnan Singh said in a keynote address to the working group meeting.

In formal comments, Dr Surin pointed out that the new framework allows for the four riparian states to consider the eventual entry of two other countries sharing the river, China and Burma.

"The future framework needs not only address the single issue of water utilisation, but indeed all attempts should be made to expand this one dimensional cooperation into other areas such as tourism transport and navigation, irrigation and agriculture, fishery and livestock.

"We should not also lose sight of the need to develop the whole length of the Mekong," he said.

Vietnam's Vice-Foreign Minister did not specifically allude to the question of expanded membership.

"We are very happy that Cambodia is with us. I share the view that new situations have arisen after 36 years and we have to discuss this in the new spirit of cooperation," he said.

Cambodian representative Ing Kieth expressed support for the participation of China and Burma.

"My delegation appreciates the idea that this cooperation would in due course be extended to all riparian countries of the Big River, aimed at promoting an extended regional cooperation in favour of the development of a stable environment and effective cooperation for development," he said.

Laos expressed hope that yesterday's ceremony would mark the first step towards the normalisation of activities in the Mekong Basin.

Northeast Asian Environment Meeting Sets Priority Projects

SK1102031293 Seoul YONHAP in English 0222 GMT 11 Feb 93

[Text] Seoul, Feb. 11 (YONHAP)—The first Northeast Asian environment meeting closed here Thursday with a report setting three priority projects, with financial assistance from international organizations secured, and with the Economic and Social Commission for Asia and the Pacific (ESCAP) designated as the temporary secretariat.

The five participating countries—South Korea, Japan, China, Mongolia and Russia—formally adopted recommendations to negotiate energy and air pollution, capacity building and ecosystem management at the next meeting, expected in Beijing in September.

The Asian Development Bank (ADB) promised to finance the three projects, and more assistance is expected when the World Bank attends from the next conference, officials here said.

The participants said they hope to expand the senior officials meeting to minister-level talks once the projects get under way and to adopt a "Seoul Declaration" to pledge inter-governmental commitment to the projects.

The Seoul meeting was the first regional environment conference in Northeast Asia, the only area in the world without such a mechanism.

North Korea turned down an invitation to attend, and it was agreed to urge Pyongyang to participate in the future.

The conference report requests the ESCAP Secretariat "make further efforts to obtain the participation of the Democratic People's Republic of Korea to participate in the subsequent meeting of the senior officials."

Project selection had to settle for equal presentation of interests since each country had different focuses, conference officials said.

China listed energy issues, particularly clean coal combustion technology, while Japan suggested joint monitoring and survey of air pollution.

For South Korea, primary concerns were energy efficiency, air pollution information and capacity building.

Mongolia picked air pollution and waste disposal and recycling, while Russia stressed ecosystem management in addition to air pollution prevention, officials said.

"Keeping in view the mutuality of interest and resource constraint, in the spirit of cooperation and accommodation," the meeting initially chooses the three priority areas, the report says.

Ecosystem management, added last, will lean mostly on deforestation and desertification, according to the report.

Participants also differed on establishing a formal mechanism with China and Japan, saying it was too early for such measures.

The conference agreed to have ESCAP serve as a temporary secretariat "till an appropriate time comes for its institutional arrangements."

The report calls on all involved countries to transmit, as early as possible, necessary information and preferences on subprojects and put the ESCAP secretariat in charge to produce a follow-up action before the meeting in Beijing.

INDONESIA

Clinton's Economic, Foreign Policies Viewed

BK2501120593 Jakarta THE JAKARTA POST in English 21 Jan 93 p 4

[Editorial: "The Three Pillars"]

[Text] Only 48 hours before Bill Clinton's inauguration as the 42nd president of the United States, allied planes—notably U.S. planes—were bombing targets in Iraq, an attack the allies claim was intended as a lesson to Iraqi president Saddam Husayn for disobeying United Nations sanctions. Thus, as the festivities around Clinton's accession take place today, other people—the victims of allied bombings—are dying in Iraq.

Some people, taking a humanitarian point of view, may say that this is not a good way for a new president to take office. Others may argue that, Saddam himself should be blamed for the bloodshed, and that the attack shows U.S. resolve in punishing Saddam and forcing Iraq to comply with the United Nations sanctions.

Today the 11 weeks of the presidential transition period is over. Exit George Bush. Enter Bill Clinton. And now the world is waiting to see what President Clinton will do, not only about Iraq but about other international problems as well. As the saying goes, if a king sneezes, his people will tremble. As the last remaining superpower and one of the world's greatest trading nations, any shift in U.S. policy will affect the rest of the world.

While waiting for Clinton to reveal his grand policy, we expect, in foreign policy at least, more of the same. The new administration will continue the legacy left by George Bush. Clinton has already vowed, for example, not to change America's hardline policy toward Iraq. And he won't, even if he has other ideas, for he must ride on the winds. According to the latest polls, the majority of the American people support the hardline policy.

But we are afraid that in adhering to this policy, Clinton, like his predecessor, will for years be haunted by Saddam, whose grip on power has only been strengthened by the allied raids. As the press has reported, the Iraqi leader has been successful in shoring up his own position by focussing his people's anger on the allies and their bombs.

Moreover, to continue this policy is to confirm concerns expressed by Third World countries that the U.S. is guilty of using a double standard, taking a hard line against the

Iraqis but behaving moderately, or doing nothing at all, on matters involving the Palestinians or the people of Bosnia. During his campaign, Clinton portrayed himself as a man who represents change. But how far Clinton will go in shaking off the legacy of George Bush's double-standard policy is anyone's guess.

Understandably, President Clinton's first obligation is to fulfill his campaign promises to the American people. He has pledged, as his first pillar, to restore America's economic vitality. In this regard, Clinton may find that the situation is better than many people felt not so long ago: there is increasing evidence that the U.S. economy is recovering, and a stimulus package which Clinton has promised to unveil soon may get it moving even faster.

Whatever the new president is planning to do, his work in creating jobs and cutting the steep American trade deficit will surely keep his hands full, at least for the time being.

The second pillar of Clinton's foreign policy, as revealed to Washington's diplomatic corps last Monday, is a restructuring of the U.S. armed forces. That restructuring, apparently, will include cuts in the defense budget, which is a reasonable step now that the Cold War is over. But how much such cuts will affect the U.S. military's presence in, say, the Asia-Pacific region remains to be seen.

The third pillar of Clinton's foreign policy is support for democratic values around the globe. As revealed by a senior official on Clinton's transition team last week, it is crucial, the new president believes, for the U.S. to resume a leadership role on environmental and development issues. The official also said President Clinton will seek greater cooperation with developing countries and will promote environmentally sustainable policies. "Helping developing countries achieve democracy and economic growth without destroying their natural resources could also help the U.S. boost exports while reducing tensions in sensitive areas," the official said.

That issue has the potential to muddy this country's future relations with the U.S. But we deem it futile to comment on what has not yet happened, except to offer the reminder that in the past the U.S., in applying too much pressure on human rights and environmental issues, has strained its relations with some Third World countries.

We hope that President Clinton, who is known for his fresh ideas and humane vision of the future, will be open to the values and perceptions of other countries even if they are sometimes in conflict with his own.

Action Urged Against Importers of Plastic, Toxic Waste

BK2601105193 Jakarta Radio Republik Indonesia Network in Indonesian 0600 GMT 26 Jan 93

[From the press review]

[Text] TERBIT discusses the presence of ownerless containers containing plastic waste at the Tanjung Priok Port, which is such a problem that President Suharto must take action by banning the import of plastic substances and instruct related agencies to investigate the presence of 116 containers containing plastic and toxic wastes at the port. With the presence of such imported plastic waste, about

9,000 scavengers who earn their livelihood from collecting garbage in the area are facing serious occupational problems. Their daily income has also shrunk. Before the arrival of the plastic waste, they managed to earn 10,000 rupiah per day, but now they can only earn 2,500 rupiah per day.

TERBIT says that if only the importers had understood the meaning of the 1982 Law No. 4 on environmental management, the current situation would never have occurred. Therefore, it is hoped that the authorities will take immediate action against the importers of plastic waste because such waste can destroy the environment and discharge substances dangerous to humans.

MP Sees Need for Bilateral Talks on Waste Disposal Issue

BK3001101493 Jakarta ANTARA in English 0722 GMT 30 Jan 93

[Text] Jakarta, Jan 30 (OANA/ANTARA)—Countries receiving and sending wastes need to hold bilateral talks on waste disposal in order to prevent the interest of both sides, said a member of the parliament [MP] here over the weekend.

Tati Sumiarno of the House's Commission VI [in charge of industry, mines and energy, capital investment] said that the waste disposal should be discussed with reference to the results of the earth summit in Rio De Janeiro last year.

The increasing awareness of the importance to protect the environment world wide requires all sides to discuss the problem of waste disposal which concerns the interest of many countries, she said.

The MP said that it is unfair for developed nations to sacrifice the interest of developing states by dumping industrial and plastic wastes into the third world. It is unfair for advanced states to sacrifice the interest of developing countries on the pretext of selling cheap goods which are in fact hazardous products and could cause pollution, she added.

Tati expressed concern over the case of plastic imports piling up at ports of Tanjung Priok in Jakarta, Tanjung Perak in Surabaya and Belawan in Medan.

She said that the implementation of the Law no. 4/1982 on the environment should be related to the results of the Rio summit. It is expected that the ruling will be implemented properly and cover the disposal of wastes in the sea and on land as well as its effect on the air.

The MP also called on companies importing wastes not to do business which promises temporary benefits but become a threat later on as a result of pollution. She called on port authorities to use sophisticated equipment which is able to detect wastes in containers at ports.

Port authorities must be able to detect radioactive substances and smuggled goods, she added.

Suharto Urges Better Management of Tropical Environment

BK0602085193 Jakarta ANTARA in English 0733 GMT 6 Feb 93

[Text] Jakarta, Feb 6 (OANA-ANTARA)—President Suharto has called for a good management of the environment in order to avoid damage to the ecosystem and preserve the nation's fauna and flora.

Addressing the opening of a workshop on management of the tropical environment at the Merdeka Palace here on Saturday, the head of state said that in the effort to delve and expose biological resources to the maximum, we have to race against time. Delay and negligence may cause certain plants and animals to become extinct.

Surveys must be made in such a way as not to cause trouble in the future. We must see to it that in case experts come to know one day about the high value and benefit of certain species, these very species would still be in existence.

Efforts to conserve the biological resources could be properly made by exploring the forests and seas according to regulations on the environment, the president said.

Present on the occasion were also Vice President Sudharmono and Forestry Minister Hasyrul Harahap.

The president, especially addressing experts from New Zealand, the Philippines, and Thailand who attended the meeting, said that the Indonesian Government had introduced programs to support guidance for the preservation of forests and to conserve the biological diversities and the ecosystem.

The government has also adopted policies on the development, conservation, and protection of forests as well as their layout.

With the rapid progress of science and technology, the biological resources would become important sources of new raw materials for the production of food, medicines, fibre, and energy.

Tropical resources are most advantageous to mankind for their being a decisive factor related to climatic conditions and the global environment.

Therefore, it would be necessary to intensify research work and take stock of all kinds of the existing plants and animals and to explore and benefit their potentials and benefits for the wellbeing of man, the president stressed [sentence as received].

Earlier, Environment Minister Emil Salim reported that the workshop, which would be held until February 18 in Manado, North Sulawesi, was sponsored by LIPI (Indonesian Institute of Sciences), the offices of the Environment Minister and the Research and Technology Minister, and the Wallacea Development Body.

JAPAN

Watanabe Calls for Worldwide Chemical Weapons Ban

OW1301172493 Tokyo KYODO in English 1705 GMT 13 Jan 93

[Text] Paris, Jan. 13 (KYODO)—Japanese Foreign Minister Michio Watanabe urged worldwide participation in a landmark treaty banning the development, production, stockpiling and use of chemical weapons at the treaty's signing ceremony in Paris on Wednesday.

"Arms control and disarmament can no longer be dealt with sufficiently in the East-West context alone. It has become an important task for all countries of the world," he said after signing the chemical weapon convention.

About 130 nations are expected to sign the treaty, the first to aim at eliminating an entire category of weapons of mass destruction, by Friday.

Several Arab countries, however, said they would not adhere to the chemical weapons convention until Israel disposes of its nuclear arms and other weapons of mass destruction.

Watanabe hailed the convention as "an unique multilateral disarmament agreement of an unprecedented nature" and said Tokyo will make the necessary domestic arrangements to speed up ratification and implementation of the treaty. He called on other countries to follow suit.

Any convention signatory has to destroy its entire chemical weapons arsenal, including weapons abandoned in other countries, and all production plants within 10 years after the treaty takes effect, at the earliest in January 1995. In exceptional cases the deadline may be extended to a maximum 15 years.

The convention will go into force 180 days after at least 65 states have ratified it but will be suspended until the beginning of 1995 due to organizational reasons.

The two-year period is needed to set up the Organization for the Prohibition of Chemical Weapons (OPCW) in The Hague, The Netherlands, a supervisory body that will monitor the member countries' compliance with the convention.

Watanabe said Japan will contribute know-how as well 2.25 million dollars in fiscal 1993 to help the OPCW's preparatory commission start work.

"Japan, having one of the largest chemical industries in the world, will be able to provide useful expertise on industrial verification," Watanabe said.

He also said Tokyo is ready to dispatch experts to the provisional technical secretariat, which will do the day-to-day work between the annual conferences of all OPCW members.

"I am confident that this convention will become a new, important pillar of international security," Watanabe said.

Watanabe said Japan will further promote arms control and disarmament by hosting a annual U.N. disarmament conference for the fifth time April 13-16 in Kyoto, western Japan.

Any OPCW member can demand inspections of suspected chemical weapons facilities in other member states, unless a 75 percent majority of the 41-nation Executive Council opposes the request within 12 hours of notification.

OPCW signatories have no right to refuse such "challenge" inspections and must allow an inspection team to enter the area concerned within two days. Within another 72 hours an on-the-spot inspection must be done.

If a signatory is found to have violated the convention and refuses to comply, a plenum conference may impose sanctions on the renegade country. If the violation poses a major threat, it can take action through the United Nations.

The convention totally bans production and proliferation of 12 chemical warfare agents like mustard gas. States also have to notify the opcw if their production of several listed chemicals with "dual uses" for both peaceful and warfare purposes exceeds a certain quantity, which would then make them subject to inspections.

Member states also have to keep records on their exports and imports of listed chemicals.

Including all plants producing dual use chemicals—annually more than 100 tons—about 6,000 facilities will be subject to regular OPCW inspections in Japan, industry sources said.

They said the industry will actively support the inspections as well as improved inspection methods "to prevent any misunderstandings about chemical weapons production."

Nevertheless, an estimated 99 percent of Japan's chemical production will not be affected by the convention, which explicitly says that peaceful chemical research and development may not be hampered, according to the Japan Chemical Industry Association.

Agency To Set Guidelines on Agricultural Chemicals

OW0602105893 Tokyo KYODO in English 1030 GMT 6 Feb 93

[Text] Tokyo, Feb. 6 (KYODO)—The Environment Agency will start an investigation from fiscal 1993 to set guidelines for the use of agricultural chemicals to lessen their harmful effects on wildlife, agency officials said Saturday.

Starting from April on a six-year schedule, the agency will analyze the effects of the use of insecticides and weed killers on wildlife, including algae, terrestrial plants, insects, shellfish, amphibians, and birds, the officials said.

The agency will then form classification standards about the effects of the chemicals by categorizing them according to toxicity, they said.

Based on the standards, it will establish the guidelines regulating the timing and location in using agricultural chemicals according to each category, keeping in mind the reproductive powers of species, the officials said.

They said 7.9 million yen will be earmarked for the fiscal 1993 budget and a panel of specialists will be set up to begin the investigation.

Present regulations on agricultural chemicals center on the harmful effects on human health and lack consideration for ecosystems, the officials said.

Recent studies have found that the variety of species decreases in areas where insecticides are sprayed, and photosynthesis of algae is impeded because of weed killers that have seeped into rivers from rice paddies.

In addition, mass usage of agricultural chemicals reportedly decreases the number of small animals such as dragonflies and frogs.

Agricultural chemicals are said to be driving storks and the Japanese crested Ibis to extinction by decreasing their feed and accumulating inside their bodies, resulting in decreased reproduction.

Government To Advance Developing Nation Aid Package at Tokyo Summit

OW0602053893 Tokyo KYODO in English 0506 GMT 6 Feb 93

[Text] Tokyo, Feb. 6 (KYODO)—Japan will propose a comprehensive package of aid to developing nations at the Tokyo Summit of seven industrialized countries in July, government sources said Saturday [6 Feb].

The sources said the proposal, tentatively called the Tokyo Charter, is designed to promote and consolidate democratic and free economic systems in developing nations in the post-Cold War era.

The package will reflect Japan's economic policies toward its allies in the Asia-Pacific region, the sources said.

The charter also aims to help developing nations around the world overcome problems arising from famine, the inflow of refugees, external debts, destruction of the environment and AIDS, they said.

With the collapse of the postwar East-West confrontation, these problems have to be dealt with on a global basis, the sources said.

The package will provide for controls of official development assistance to nations trying to develop and produce weapons of mass destruction, the sources said.

Japan has instituted a four-point policy for its official development assistance, including a ban on the extension of aid to such countries.

"It is important to adopt and confirm a new foreign aid concept and unified target at the forthcoming summit," said one source.

The charter calls on the advanced nations participating in the summit to contribute to economic development and political stability in developing nations on an equal partnership, the sources said.

SOUTH KOREA

IEA Urges Easing of Restrictions in Energy Market

SK2701071493 Seoul YONHAP in English 0553 GMT 27 Jan 93

[Text] Seoul, Jan. 27 (YONHAP)—The International Energy Agency (IEA) has urged South Korea to ease restriction of the energy market and continue its efforts to strengthen its energy security and conservation and to protect the environment.

A report on Korean energy policy revealed Wednesday by visiting IEA Director-general Helga Steeg says that tight state control and lack of financial support for Korea's energy industry hinder promotion of energy security and saving and protection of the environment.

It suggests less restriction of the energy market, recommending liberalization of oil prices and more autonomy for the petroleum industry, for continuous economic prosperity.

To enhance understanding about the important role of atomic energy to support Korea's policies on energy, economy and the environment, it stresses the utilization of diverse nuclear-related technologies.

CITES Expected To Pass Strong Measures Against Korea

SK0902045193 Seoul YONHAP in English 0253 GMT 9 Feb 93

[Text] Seoul, Feb. 9 (YONHAP)—Trade in endangered species not only threatens wildlife with extinction, but could hit Korea where it really hurts—in the trade balance.

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is expected to pass strong measures against Korea for using wild animals to make medicine at a meeting in Washington on March 1-5, according to government sources.

Britain recently passed legislation that paved the way for trade sanctions such as revocation of Most-Favored Nation (MFN) status against countries that fail to halt the trade in prohibited animal products, including rhinoceros horn, tiger bones, bear's gall and ivory.

The United States has a similar bill pending in Congress that will allow retaliation against countries exchanging banned animal products.

Global organizations, including the world wildlife fund, called for punitive measures against Taiwan, China, Korea and South Africa at a hearing on preservation of the rhinoceros in Washington on Jan. 21, accusing the four nations of using rhinos in manufacturing medicine.

Activists have lobbied the CITES members to consider all available steps like nullification of MFN status and retaliatory trade measures before drawing up an international law to crack down on nations that trade in endangered species.

It was decided that the issue should be resolved at a meeting of the standing committee next month.

Korea told the January hearing that it should be excluded from retaliation because it banned all rhino imports in 1983 and enacted a law prohibiting the use of rhinoceros in making medicines.

The environmentalists replied that they had proof that Korea still used rhinoceros horns, tiger bones, bear's gall and antlers in oriental medicine.

The government is preparing domestic laws to join CITES, but signing is being delayed because some interest groups are opposed.

CITES went into effect in 1975 and currently has 109 signatories, including the United States and Japan.

LAOS

Ministries Issue Instructions on Slash-and-Burn Cultivation

BK0202060793 Vientiane Vitthayou Hengsat Radio Network in Lao 0000 GMT 2 Feb 93

[Text] In late January, the Ministry of Agriculture and Forestry issued instructions to agriculture and forestry services of all provinces, Sianghon-Hongsa Special Zone, and Vientiane Municipality, on measures controlling slash-and-burn cultivation and preventing bush fire during the dry season.

The instructions suggest that each province disseminate the party and state policies to farmers and multiethnic people and encourage them all to actively implement the policies and measures to eradicate slash-and-burn cultivation which adversely affects natural resources and environment. The multiethnic people who still earn their living through slash-and-burn cultivation should be encouraged to shift to stationary cultivation or planting rotation crops.

The instructions also absolutely prohibit encroaching and slash- and-burn cultivation in prohibited forest areas, forest reserves, and protection, production, and rehabilitation forests. Slash-and- burn cultivation and felling of trees in watershed areas and forest areas of sloping degrees exceeding 25 percent are also prohibited.

The instructions also resolutely prohibit the destruction of forests and hunting animals in forests of any condition. All related sectors are advised to strictly impose measures against violators of various rules and regulations, principles, and instructions on forestry.

SINGAPORE

New Measures To Phase Out Use of Chlorofluorocarbons

BK0202134493 Singapore THE STRAITS TIMES in English 2 Feb 93 p 36

[By Kevin Lim]

[Text] The government has come out with several measures to help the early phase-out of chlorofluorocarbons (CFCs) and other ozone-depleting substances (ODS) usage by local industries. They include speedier reductions in the amount of CFCs allocated to industry, as well as financial assistance from bodies like the Economic Development

Board [EDB] to help companies make the switch towards environmentally-friendly alternatives.

The measures are in line with the acceleration of the time-table to phase out ODS. The new timeframe was set by signatories of the 1987 Montreal Protocol at a meeting in Copenhagen in November last year. Singapore is a party to the protocol.

The Montreal Protocol signed under the auspices of the United Nations, originally sought to stop the use of CFCs and halons (used in fire extinguishers) by January 1, 2000. But during the Copenhagen meeting, the international community agreed to bring forward the phase-out date to January 1, 1996 for CFCs, and by the beginning of next year for halons. In addition, time schedules for reducing the use of other less harmful ozone-depleting chemicals such as hydrochlorofluorocarbons and methyl chloroform were also introduced.

Announcing the steps to be taken yesterday, Mr. Lai Seck Khui, the Ministry of Trade and Industry's deputy secretary, said the Trade Development Board [TDB] will register all traders and users of ozone-depleting substances that were exempted from the original Montreal agreement. TDB will then introduce measures to control the use of these substances.

Other steps include further reduction in the amount of CFCs available to users through TDB's quota system from next year, and a ban from January 1 next year on the imports of halons for domestic consumption—except for those that have been recycled.

He added that EDB and the Singapore Institute of Standards and Industrial Research would extend existing schemes such as the Local Enterprise Finance Scheme and the Investment Allowance Scheme to small companies making the switch. The former scheme provides concessionary loans, while the latter allows companies to claim tax allowance for approved investments in new equipment.

Mr. Lai also said that manufacturers and other CFC users should not have much difficulty in meeting the new deadlines if they start working towards eliminating the use of CFCs in their operations. Many multinationals have in fact taken steps to eliminate the use of CFCs in their manufacturing operations here, and are insisting that their suppliers do likewise.

CFCs are chemicals that when released into the atmosphere, attack the ozone layer which filters out excessive ultraviolet radiation. They are used mainly in industrial cleansers and coolants, which are in turn used in refrigerators and air-conditioners. Excessive exposure to ultraviolet rays causes, among other things, skin cancer and eye damage.

Singapore consumed about 2,000 tonnes of CFCs and 980 tonnes of halons last year—about half the 1986 levels.

TAIWAN

Draft Trade Agreement With U.S To Pave Way for Environmental Negotiations

*OW1801084793 Taipei CNA in English 0738 GMT
18 Jan 93*

[Text] Taipei, Jan. 18 (CNA)—The signing of a draft agreement on trade and investment framework between Taiwan and the United States will pave the way for a free trade pact between the two countries, Economic Affairs Minister Hsiao Wan-chang said over the weekend.

The draft pact was inked in Washington, D.C. last Friday by representatives of the American Institute in Taiwan (AIT) and the Coordination Council for North American Affairs (CCNAA) after three days of talks.

Hsiao said he was elated over the signing of the trade framework agreement, which will establish a channel for consultations, thereby helping remove trade barriers between the two sides.

Under the accord, a permanent council will be jointly set up to deal with trade and investment flows between Taipei and Washington.

The agreement will become effective after the approval by both governments.

Within six months after the pact goes into force, Hsiao pointed out, the two sides will enter into negotiations on environmental protection, the settlement of trade disputes, protection of intellectual property rights, and Taiwan's membership in the General Agreement on Tariffs and Trade.

The minister expressed the hope that the two sides will soon sign a bilateral agreement on the phase-out of chlorofluorocarbons (CFCs) to better protect the interests of domestic manufacturers.

Currently, he noted, Taiwan products will not be retaliated by the United States, which announced recently in its federal gazette that it views Taiwan as the equivalent of a signatory of the Montreal Protocol.

The protocol, which advocates a ban on CFCs to protect the earth's ozone layer, passed a resolution at its council meeting last November pledging to impose trade sanctions against non-member countries, who do not enforce the ban.

Trade between the two countries totaled US\$39.34 billion last year, of which Taiwan's exports amounted to US\$23.57 billion and imports US\$15.77 billion, thus posting a balance of US\$7.8 billion in favor of Taiwan.

Taiwan's trade surplus with the United States in 1992, however, represented a substantial decline from 1990, which saw a favorable balance of about US\$10 billion.

THAILAND

Gulf of Thailand Pollution Crisis Examined

93WN0212A Bangkok BANGKOK POST in English
14 Nov 92 p 1

[Excerpt] The Gulf of Thailand which accommodates 80 percent of Thailand's fish is facing the crisis of water pollution problems due to the growth of coastal crowded communities and industries.

The problem was discussed on the first day of a two-day seminar on "National Profits in the Gulf of Thailand" held by the National Security Council in Pattaya yesterday.

Water pollution is deemed critical in the inner part of the Gulf ranging from Prachuab Khiri Khan and Rayong provinces up to river estuaries in the Central Region, said Dr Piamsak Maynasawase, director of Chulalongkorn University's Water Resources Research Institute.

According to Dr Piamsak, the major cause is waste water discharged from industrial estates and communities into the sea via such rivers as the Chao Phraya, Tha Chin, Bang Pakong and Mae Klong. Unfortunately, the nature of water flow in the inner part of the Gulf requires as much as about 50 days for waste water from the rivers to fade away in the outer part of the Gulf.

The confined waste, as a result, leads to an increase of plankton in the inner Thai Gulf. The great amount of plankton kills fish because of the lack of oxygen.

In the past, the integration of plankton occurred a few times annually, Dr Piamsak said. However, according to reports by Chulalongkorn's marine research institute on Si Chang Island, Chon Buri, plankton increase of up to 70 times has been recorded in the inner Gulf this year.

The longer the problem remains unsolved, the less fish will exist in the Thai Gulf, he said, adding it is high time to limit polluted water drainage and set up monitoring teams to closely watch the pollution.

According to the Fishery Department, 80 percent of fish in Thai waters are found in the Gulf of Thailand.

Dr Piamsak, meanwhile, warned of possible mercury threats in the outer part of the Gulf where many oil and natural gas drilling bases are situated.

The mercury disaster from petroleum industries in Minamata, Japan, in 1954 brought deadly results so safety procedures should be imposed at all drilling bases located in the Gulf of Thailand to avert the problem, he said.

Worse pollution threats in the Gulf could be foreseen for the future because studies have predicted that the population in 16 coastal provinces of the Gulf stretching from the southern to the eastern coasts would double within two decades, said Santhat Somcheewita, secretary-general of the Environmental Policy Office.

The problem would be most likely in Songkhla and Surat Thani provinces where rapid population growth is expected in the future, he said.

Those living by the sea would be the first to face the pollution, he said.

It is not enough for the National Environmental Office alone to set up a master plan to tackle pollution and residents in the provinces should be told about environmental awareness, he said.

Oil slicks also pose pollution threats to the Gulf as all Thai oil imports must be delivered through the Gulf and more tanker crashes could not be ruled out. [passage omitted]

Support Urged for 'Community Forestry' Concept

BK3001034393 Bangkok BANGKOK POST in English
30 Jan 93 p 6

[Text] Experts from 19 countries in the Asia-Pacific region have urged legislative support for the new concept of community forestry to effectively tackle the deforestation problem in Asia.

More than 80 experts attending a three-day workshop on "Policy and Legislation in Community Forestry," called community forestry the best option since it envisages participation of forest-dependent people in the sustainable use and protection of forests.

"Community forestry is a means to promote equity and prevent further degradation of Asia's forest reserves," they said.

Although many governments in the Asian and Pacific region have started responding to the idea, the promotion of community forestry in many countries is still far from satisfactory due to a lack of adequate financial and organisational support.

The experts also recommended that new policies and legislation be based on local customs and culture.

Dr Somsak Sukwong director of the Regional Community Forestry Training Centre at Kasetsart University, said: "In Thailand, community forestry, initiated spontaneously by villagers in Ubon Ratchathani and some other northern provinces, has been a great success."

He said villagers realise the importance of watershed forests.

"To farmers water is indispensable and that was the determining factor that led them to preserve watershed forests.

"All the people living along a river basin in Lamphun pooled in their efforts," he said.

On the contrary the Forestry Department project has not succeeded as well because it focuses on afforestation rather than people's participation, he said.

Dr Somsak pointed out that the Government should provide support to projects initiated by local villagers to ensure sustainability.

"These model projects should be legalised. At present there are no laws to support them although some projects have been in place for some 60 years.

"People need guarantees from the government," he said.

The workshop agreed that incentives should be an integral part of any community forestry scheme.

Water Shortage Seen as Political Crisis

BK0902042393 Bangkok *THE NATION* in English
9 Feb 93 pp C1, C3

[Article by James Fahn: "A Special Report: Going With the Flow"]

[Text] The government has come forward with several plans to combat the water shortage, including a new law, more dams and river diversions. They are sure to result in political conflict.

A glass of water sits on a table. Some say it's half empty; others that it's half full.

This more or less describes the argument over how best to respond to the water shortage looming over Thailand as the long, dry hot season approaches.

The government and the state describe the problem as a lack of supply. Officials claim that more dams need to be built because too much water is running off to the sea without being used.

But critics argue that this water is in fact used for various activities, including fishing and shipping. What's more, they say, the social and environmental costs of building more dams are simply too great; Thailand should learn to live with the water supply it has.

The kingdom would be able to do that, they add, if the authorities would turn their attention away from finding new sources of water and instead focused on controlling demand. Thirty percent of the water supplied to Bangkok, and 70 percent of water used for agriculture, is wasted. Reducing this waste is just as good as increasing supply.

The best way to increase efficiency is by making people pay the full cost for the water they consume. Water is heavily subsidized in Thailand, both in the cities and in the country, where 90 percent of the country's water is consumed and many farmers receive free irrigation services.

"The Royal Irrigation Department feels its role is to find new sources of water," complains Dr Chiraphon Sinthunawa, a professor at Mahidol University. "In fact, it has another role which it has always neglected: managing our water resources efficiently."

The government has so far come out with four different types of responses to the water shortage: The promotion of alternative crops to replace water-intensive rice, a programme which everyone seems to support; a proposal by the Interior Ministry to build small-scale water supply projects, about which little is known; a new law to improve water management, which seems unlikely to please most critics; and a large-scale river diversion and dam project in the north, which has already raised vocal opposition from environmental groups and local residents.

Replacing Rice

One solution which everyone seems to agree on is crop diversification. Market prices for rice—which requires a great deal of water—are low, so promoting replacement crops makes sense both economically and environmentally. The government has started such a programme, but it's slow going.

"The Department of Agricultural Extension has been trying to promote replacement crops, but farmers need help in marketing, training and additional investment," explains Dr Aphichat Anukunlamphai, director of the Office of the National Water Resources Committee. "This year, 220,000 rai of land has been switched from rice to other crops. We hope to reach a million rai in five years."

"The amount of land which undergoes second cropping varies from 1.5 to 2.5 million rai. We hoped the public relations campaign would convince farmers not to plant a second crop. But we've just learned one million rai has already been planted, double what we estimated. So when the RID releases water for domestic consumption, some farmers may take it."

New Law

In fact, the government is taking steps which it claims will improve water management. But critics are likely to complain they are too, well, watered down. Nor are they likely to win the favour of the many vested interests which want to maintain the status quo.

These steps centre on a new law being drawn up. Although the bill is far from completed, it seems sure to arouse a great deal of controversy.

According to Aphichat, the law would create a new body—the National Water Resources Board—to look after management of water resources. The committee would be chaired by the prime minister, and would be linked to an office which would carry out policy and planning.

"Hopefully, it would stay away from implementation," confides Aphichat. "We already have 30 departments under seven ministries to carry out implementation, which must be a world record."

In addition, he says, a new Basin Authority would be established, comprising representatives from water basins throughout the country. "They would decide how they want to allocate water, so that decisions do not just come from the central government."

The creation of this body would be in line with a practice known as bioregionalism, in which local people are granted control over local resources. But it's unclear how much real power the organization would have.

Aphichat agrees that "it's time to emphasize the demand side and improve efficiency. That's why pricing is important."

Water tariffs in Bangkok are subsidized: residents pay less than businesses; and, crazily enough, above the limit of 2,000 cubic metres per month, industries pay less for water the more they use. A recent attempt to increase rates was quietly killed off. Interior Minister Gen Chawalit Yongchaiyut has even suggested reducing rates in certain areas.

But the prospects for greater water efficiency in Bangkok are still relatively bright, because there seems to be a quietly growing consensus that urban institutions—businesses and industrial concerns—if not residents, should pay the full price for the water they use. Even as it stands, the Metropolitan Waterworks Authority has an

incentive to create a demand-side management programme (see adjoining article) because it is allowed to charge its customers.

The Royal Irrigation Department (RID) is not, however. And even those who are bold enough to come out and say that farmers should pay for the water they receive attach conditions. This is because many farmers are poor (although those who receive irrigation from the state may not be) and because officials fear the political consequences of making farmers pay for water.

"Industries and large farmers should pay, but we cannot ask poor, small farmers to do so," maintains Dr Suwit Yotmani of the Asian Institute for Technology.

Timebomb

In short, making people—especially farmers—pay the full price for water after so many years of subsidies is a political timebomb. So the government, and even most critics, seems set to shy away from this direct approach.

Aphichat still doesn't like the idea of the RID selling water. Instead, he favours making farmers pay a nominal fee, perhaps according to the amount of land they want to irrigate.

But unless people are forced to pay for the amount of water they actually consume, they will still have the incentive to grab as much as they can. "Farmers should pay according to how much they use," says Chiraphon, even if it's just a token fee.

Theoretically, this money could be used to improve operation and maintenance of the water supply system. But Aphichat instead advocates that it be given back to farmer cooperatives to be used as they please, and Chiraphon essentially agrees.

In fact, there seems to be a general agreement that water efficiency in the countryside should be promoted directly by the government, through lining irrigation canals, supplying the proper equipment and so on.

Government officials like Aphichat and Dr Bunyok Watthanaphusi, a former RID engineer now advising PM's [Prime Minister's] Office Minister Sawit Phothiwihok, argue that most farmers simply are not well-educated enough to handle the technology needed to go along with increasing efficiency.

And environmentalists like Withun Pemophongsacharoen of the Project for Ecological Recovery suspect that most of the water is wasted before it even gets to the farms. "The problem is in the irrigation system, not the agricultural system," he asserts.

Witun is also a firm advocate of giving farmers water rights.

Currently, no one officially owns water in Thailand; de facto control over the resource is held by the many implementing agencies. In theory, farmers could be enticed into paying for water by being granted long-term water rights in exchange.

But as it stands, the new bill would not quite work this way. It would officially grant ownership to the state, which

would then allocate water rights to the people, probably according to who has traditionally been using it.

But, explains Aphichat, in an emergency the government would be able to declare certain regions a "crisis area," and revoke these rights. "If investments have been made, there would be compensation," he adds.

So farmers would still not have long-term water security. They could remain subject to the whims of those in power.

Witun has a lot of objections to the new bill. "The government plans to charge farmers Bt20 per rai per year for water, saying the real cost is Bt1,000. They say they will use the price mechanism to increase efficiency. But in reality the government will get Bt700 million to subsidize the current system."

Aphichat, however, claims that the law will have trouble passing through parliament.

Kok-Ing-Nan Project

The measures needed to promote proper water management are so politically explosive that the government may believe it will be easier to go ahead and simply find new sources of water.

Just last week, a committee chaired by PM Chuan Likphai approved that allocation of Bt100 million to conduct a feasibility study into diverting water from several northern rivers so that they flow into the Sirikit Dam instead of the Mekong River. The Kaeng Sua Ten Dam was not mentioned in last week's announcement, but some scenarios include the construction of this large dam on the Yom River into the project.

Even excluding Kaeng Sua Ten, the Kok-Ing-Nan Project is sure to cause conflict, most notably with Cambodia and Vietnam, downstream neighbours on the Mekong. They have long been fearful that Thailand would unilaterally attempt to divert water from the river.

Intriguingly, the announcement came just prior to a trip by Deputy Foreign Minister Surin Pitsuwan to Hanoi to sign an document with Laos, Cambodia, and Vietnam promising cooperation in dividing the Mekong Basin's water resources: in effect, an agreement to seek an agreement.

The government claims the project will cost Bt25 billion and deliver 2,700 mcm into the Sirikit reservoir. If history is any guide, these numbers are probably optimistic (for instance, they might use the years of highest rainfall). Even if they are accurate, water at B510 per cubic metre is too expensive for growing rice.

And yet the government claims the water will be used primarily for irrigation, along with producing electricity. "They always claim the farmer is the top priority," explains Chiraphon. "But when there's a shortage, water is reserved for Bangkok and the farmers have to do without a second crop."

The water shortage, in other words, has driven Thailand to risk conflict with its Indochinese neighbours by taking water from a common basin and diverting it to the Chao Phraya Basin. And no one knows what the social and environmental impact of this project will be in Thailand.

Thai authorities have also talked of reaching an agreement with Burma over taking water from the Salween River Basin, a war zone, for use in the Central Plains. And the RID has come up with several plans for new dams, most notably the Kaeng Sua Ten.

"There's a water shortage downstream," explains Bunyok. "If we want to store more water, we either have to bring it in from other basins or save water from the Yom River in the wet season. A dam on the Yom is the only one left with the potential to regulate flow, along with some small dams downstream. We may have to sacrifice some forest, but it's a price worth paying."

And what about the people who have to be moved? "There have been some resettlement problems in the past, but ... Look, the people there are not happy now. Sure, when I was young, we didn't have much and I was happy, but now we want things like TVs and air conditioning." And yet local residents have already held protests against the Kaeng Sua Ten proposal.

Repeating the Cycle

Witun's opposition to such dams is well known. "The existing water supply-side plan has failed. If we strengthen this system, it doesn't ensure that a crisis won't happen again. Demand-side management is much more reliable. We can solve the problem permanently.

"Some government officials are blaming the water shortage on increases in upstream demand. EGAT's Irrigation Department is doing a survey on this, and the PM recently held a talk with provincial governors. He may try and stop people upstream from using water, so it would all be for the benefit of Bangkok. This creates a lot of conflict, also with neighbouring countries.

"No dam stores water according to the plan. They claim it's due to forest loss, soil erosion, increased demand, or less rainfall. But these factors are reality, so there is no guarantee of success.

"They say Kaeng Sua Ten will provide irrigation water for 350,000 rai. But it will cost Bt4.2 billion. That's an investment of Bt13,000 per rai over 50 years, or Bt260 per rai per year. One rai of paddy is worth about Bt2,000, so it doesn't make economic sense.

"They say they want to promote a second crop. But they spent a lot of money doing that in the Chao Phraya Basin twelve years ago, and now they tell farmers they can't have it. They will do the same with Kaeng Sua Ten."

"The dam-builders are using this opportunity to try and build more dams. Maybe the government thinks this will appease the farmers," says Kevin Kinvig, an economist studying water resources at the Thailand Development Research Institute. "But if they do build more, farmers will just use water more intensively because they don't pay for it."

So the engineer sees Thailand's supply of water as empty and wants to fill it up. The environmentalist sees it as full and wants to use it as efficiently as possible. And the economist wants to make sure the water doesn't all just leak away.

The water crisis has become a political crisis. As such, finding a compromise won't be easy.

VIETNAM

River System Infrastructure Undergoing Improvement

BK0702073693 Hanoi VNA in English
0637 GMT 7 Feb 93

[Text] Hanoi, 7 Feb (VNA)—The Vietnam Waterway Construction Corporation is assuming the main responsibility for building the infrastructures of the river system with a total length of more than 3,500 km and 40 km river ports.

General Director Nguyen Van Tuong of the corporation said that over the last 10 years the tempo of river wharf construction has improved markedly thanks to the increase of the total motive capacity of equipment from 36,000 hp to 56,000 hp.

At the same time, its capacity of dredging, refloating sunk ships and removing reefs has also increased thanks to the acquisition of many dredges of higher capacity. Especially, for the first time Vietnam has designed and built a dredger with a capacity of 300 cubic metres per hour. Smaller sized dredgers have also been built.

More than 40 percent of the small ships used for line survey have been replaced by new ships made in the country or imported.

Many foreign made self-propelled dredgers and modern exploring equipment have been imported for use in complicated terrains.

In 1990 and 1991 the waterway construction corporation dredged 11 million cubic metres of mud from river beds compared to seven million in 1989. It opened a number of new waterways to the remote mountain areas in the north and to the southern plain such as to can tho port accessible to ships of 5,000 tonnes, to Cua Ong coal port for ships of 30,000 tonnes and to Vung Tau port for ships of 10,000 tonnes, as well as various ports in central Vietnam like Cua Viet in Quang Tri province, Quy Nhon port, in Khanh Hoa province, etc. It also took part in the construction of a number of projects at the Truong Sa (Spratly) islands.

Especially, the corporation has fulfilled a contract to dredge 600,000 cubic metres to open a fairway in the Tonkin Gulf for the French Total Oil Company for which it was paid 400,000 US dollars.

In the coming time, the corporation will cooperate with the Netherlands and France in training experts and technicians.

ALBANIA

World Bank, Committee Study Environmental Protection Options

*AU2601174693 Tirana ATA in English 1116 GMT
26 Jan 93*

[Text] Tirana, January 26 (ATA)—The Committee for the Environmental Protection and the World Bank have recently undertaken a study on the strategy of the environmental protection in Albania. One of the main objectives is the compilation of a national plan for the protection of environment.

This is the first study made in this field which aims to give a general panorama of all the questions of environment in Albania. Although degradation of environment is not as serious as in other countries of Eastern and Central Europe, still there are problems such as the discharge of industrial waters, land erosion, the lack and pollution of the drinking water, local pollution of the air, water, and land, etc.

The first stage of this study is over and the second one is in the process. The results of the first stage show of the great importance of these questions, whose solution indispensably demands a new legislation on environment.

BULGARIA

Ways To Improve Kozloduy Nuclear Safety Suggested

*AU2501170993 Sofia BULGARSKA ARMIYA
in Bulgarian 19 Jan 93 p 1*

[Luchezar Lozanov article: "Army Equipment Producers Could Contribute to Nuclear Power Plant Safety"]

[Text] The nuclear power station is one of the few solid producers in our country engulfed by a grave economic crisis. In addition, its personnel have not presented any social demands. This is not because they have no such demands, but because every violation of "the necessary versus the possible" formula could cause a catastrophe. One third of our electricity is coming this winter from Kozloduy.

The demands of environment protection champions and simple citizens toward the Kozloduy nuclear power station are numerous and justified. However, people tend to forget that if one only takes from the barrel without adding anything to it, it will soon become empty. Tsvetan Andreev, chief inspector in charge of monitoring and controlling radiation, says:

Nuclear power stations similar to Kozloduy exist in Paks in Hungary and Lovisa in Finland. Those countries annually invest millions of dollars maintaining the safety of those stations. We do not invest anything. Or let us take Czechoslovakia. In the last six years the government has invested 40,000 dollars a year in Bohunice. On the other hand, so far we have spent about 300 million leva on repairing the Fifth Reactor, preparing the Second Reactor for repairs, and beginning repairs to the Fourth Reactor. The disproportion in investment is emphatic. Improving safety is not only a way of thinking but a means of caring

for man. In Kozloduy people live on the 13th floor without a lift. There are no stores, and the municipality has no gasoline. You cannot expect someone who comes to Kozloduy to become an angel, an exemplary human being, once he begins to work at the nuclear plant. In the West one cannot enter or leave nuclear zones without inspections. A checkpoint which would restrict entrance to the Kozloduy nuclear power station would cost DM250,000. We do not have this kind of money. In addition to discipline, the people also need clothes and equipment....

The experience that the nuclear stations's experts obtain from foreign colleagues and trips to nuclear stations abroad gives them a clear idea about the model and level of safety which we could also achieve. It appears that there are many points of contact with the Army and the military industry. This is what Tsvetan Andreev says in this context:

We need precise instruments to measure radiation. We have established that the Ekoel station in Pleven produces nuclear equipment according to models provided by the Army which is better than the equipment produced in the West. Both sides could benefit—we could purchase equipment when the producers' markets will disintegrate because of conversion. However, we were informed by the station that the patent belongs to the Ministry of Defense, and that we should seek permission from it. We went to several places and could not discover an official who could untie our hands. What we have here is a paradox—instead of purchasing Bulgarian production with our money, it will be foreign partners who will get our money. We have received offers from many Western companies which are eager to sell us their equipment. This situation applies also to equipment used by Chemical Warfare Troops, Civil Defense, and so forth. We all will benefit if we sit together and coordinate our positions.

Austrian Powdered Milk Found To Contain Radioactive Cesium

*AU2001182093 Sofia BTA in English 1419 GMT
20 Jan 93*

[Text] Sofia, January 20 (BTA)—Dr. Lyubomir Kumanov, chief Bulgarian sanitary inspector and deputy health minister, gave a news conference today and provided ample details on the widely discussed case concerning the radioactive contamination of yoghurt recorded in several towns nationwide.

One kilogramme of powdered milk imported from Austria was submitted as a sample for testing at the state veterinary and hygiene inspectorate by mid-December. This was an obligatory test to license the import of huge amounts of milk powder for animal feed. The caesium content of the sample measured between 2,400 and 2,600 becquerels per kilogramme, i.e. 6-7 times higher than the acceptable level set by the EC (370 becquerels/kg). Since nobody came to take the results of the test, police had to intervene to detect the person. The person, who submitted the milk sample for testing, yesterday signed a declaration certifying that only one kilogramme of the contaminated milk powder had been imported into Bulgaria.

In late December 1992, the GMG Trading Company in Blagoevgrad (southern Bulgaria) sent one kilogramme of

milk powder, imported from Austria, for testing at the Veterinary and Hygiene Inspectorate lab in Sofia. The sample tested positive for radioactive contamination. Caesium content exceeded the acceptable level 5-6 times.

After that, all sanitary inspectorates nationwide were asked to test milk samples. On January 14, the Military Medical Academy in Sofia found that the caesium content in Plovdiv yoghurt was 4-6 becquerels/kg higher than the acceptable limit. This content is not dangerous for human health. The increase is however surprising since caesium in yoghurt has never exceeded 0.5 to 1 becquerels above the acceptable limits so far. Medical experts suppose that powdered milk of higher radioactive content was used in yoghurt production.

All sanitary inspectorates in Bulgaria are now testing powdered milk, yoghurt, milk, cheese and yellow cheese at each stage—from production cycles to retail outlets. Thousands of milk samples have been tested so far and none have proved radioactive.

Cabinet Adopts Sanctions for Pollution

AU2101180293 Sofia BTA in English
1648 GMT 21 Jan 93

[Excerpt] Sofia, January 21 (BTA)—The government today adopted an ordinance on the imposition of sanctions for environmental damages and pollution. The new document extends the liability to sanctions. It introduces sanctions against noise pollution and electromagnetic fields exceeding the acceptable limits. Sanctions introduced by the new ordinance will restrict the indiscriminate exploitation of subsoil resources. An annex to the ordinance contains an enlarged and detailed list of noxious substances and pollutants. The list was compiled in conformity with the latest research into the extent of damage to human health and biological resources.

Referendum on Resumption of Belene Project Proposed

AU2901133893 Sofia BTA in English
2044 GMT 29 Jan 93

[Text] Sofia, January 29 (BTA)—In an address to the president, parliament and the government, the local authorities in the Danubian town of Svishtov insist on stopping the construction of a nuclear power plant at Belene (near Svishtov), making a decision for an efficient use of the site and on auditing the construction site. The town authorities have decided to hold a local referendum on March 20 to find out whether the population would agree or not with the construction of an N-plant at Belene - the second one in this country. The N-plant construction was stopped three years ago at the insistence of the local population and environmentalist organizations.

The construction of the Belene N-plant began in 1985. A parliamentary commission was set up at the beginning of 1990 to study the problem and the construction was stopped awaiting the commission to come out with a decision. Later on it was decided to construct a steam power station on the site, but it was not proceeded with the

realization of the project. There have been some publications in the press of late saying that the N-plant construction will go on.

The question of resuming the construction of the N-plant has been posed by nobody and nowhere, Nikita Shervashidze, director general of Energoproekt, categorically stated yesterday. According to him, probably a new environmental analysis will be made by experts, as the older one was made incompetently. In the coming years Bulgaria will need new, 2-3,000 Megawatt capacities. That is why it is considered which variant of using the construction site would be economically most feasible. Mr. Shervashidze suggested to set up a fund, jointly with the Power Engineering Committee, for conducting a public opinion poll. However, the poll should not be restricted to the Svishtov area, it should cover the whole country, he said.

Ecoglasnost Petitions for President Zhelev's Resignation

AU3001144293 Sofia BTA in English
2228 GMT 29 Jan 93

["Today"—BTA lead]

[Excerpts] Sofia, January 29 (BTA)—Today the chairman of Ecoglasnost (affiliated to the Union of Democratic Forces) [SDS], Edvin Sugarev, handed to the presidency a petition for President Zhelev's resignation signed by over 31,000 people. The act was accompanied by an Ecoglasnost demonstration in front of the Presidency. The sign-in campaign was launched when the UDF cabinet fell from power. The petition was handed over to the chief of the protocol of the Presidency. President Zhelyu Zhelev is to blame for all that has happened in Bulgaria, especially for the fall of the first democratic government of this country which was formed by the SDS, mr Sugarev said.

Minister of the Environment Valentin Bosevski and the secretary of state of the German Ministry of the Environment and Nuclear Safety, Klemens Stotmann, signed an agreement on Bulgarian-German cooperation in the sphere of environment. The agreement regulates the two countries' cooperation in the management, economy and economic assessments of environment in view of environmental protection. The agreement, which is operative for a period of five years, treats the problem of improving the qualification of personnel as well. Germany has delivered to Bulgaria two stations for air pollution control and other equipment valued at over one million Deutsche marks.

A Bulgarian parliamentary delegation is leaving for Bonn on February 2, the Press Service of the National Assembly announced today. The delegation, headed by National Assembly Chairman Aleksandur Yordanov, will pay a visit there at the invitation of Prof. Dr. Rita Suessmuth, president of the German Bundestag. Mr Yordanov will be received by Federal President Dr. Richard von Weizsaecker. Meetings with the Bundestag president, with the floor leaders of parliamentary groups and participation in a Bundestag plenary sitting are also on the schedule.

At a meeting of the Supreme Military Council, Minister of Defence Valentin Aleksandrov proposed to work out a programme for the rotation of Army personnel, manning the Army and training it, the Defence Ministry's Press

Service announced. Minister Aleksandrov laid particular stress on the necessity to take measures for the prevention of abuses in the Army. Views were set out on the problems of military publications and the change of military symbols and rituals. [passage omitted]

The retail prices of the goods monitored by the Council of Ministers have gone up 4.1 percent over the last two weeks, the National Statistical Institute announced. The steepest is the rise in mutton prices—10.1 percent, of cow's cheese—7.6 percent, of bread—about 5 percent. Prices shot up 63 percent from the ones projected by the government.

Three of the six power generation units at the Kozloduy Nuclear Power Plant are now in operation, yielding 1,400 Megawatts. Only the 440-Megawatt Unit 4 works to capacity. Unit 2, recently brought on stream, and Unit 5, which has its emergency power supply system repaired while in operation, utilize 50 percent of their capacity. Unit 1 is under repair, Unit 3 is being refueled, the plant's information service reported. Closed for repair after an accident, the 1,000-megawatt Unit 6 is awaiting a permission for linking it to the national system. [passage omitted]

Government Demands International Observer Mission on Danube

AU0102191193 Sofia BTA in English
1852 GMT 1 Feb 93

[Text] Sofia, February 1 (BTA)—The Bulgarian Government proposes that one or several permanent international observer missions be stationed in the lower reaches of the Danube river in a declaration adopted at a regular meeting today. The government reiterates its willingness to strictly enforce the embargo against Serbia and Montenegro. At the same time, the Bulgarian Government realizes that the use of force, which is not explicitly envisioned in UN Security Council Resolution 787, may lead to developments in the region which are hard to predict, including the spread of the military conflict, the document says. With a view to the concrete situation, the Bulgarian Government has taken all possible action to enforce Resolution 787 unilaterally by peaceful means.

There is also the danger of loss of life and an environmental catastrophe in the Danube and the Black Sea, which would necessitate the closure of the nuclear power plant in Kozloduy. The cabinet believes the international community should give priority to the problem of the responsibility of those, who directly violated the sanctions. The issue of responsibility should be treated separately for the countries which load the barge trains, the countries whose territorial waters are crossed by them, and the countries acting in the common section of the Danube River, the declaration says.

Mindful of the fact that there are no liquid fuel loading and unloading facilities on the Bulgarian coast and that, reportedly, the sanction-busting originated downstream from the Bulgarian-Romanian section of the river, the Bulgarian Government proposes that one or several permanent international observer missions be stationed in the lower reaches of the Danube. Their mandate may include notification and prevention of violations, registering of sanction-busting, and so on.

CZECH REPUBLIC

Success of Danish Firm's Garbage Dump Lauded

93WN0248A Copenhagen BERLINGSKE TIDENDE
in Danish 13 Jan 93 p 5

[Article by Lise Tajik: "A Garbage Dump With Danish Technology: Investing in the Czech Republic"]

[Text] *The IO [East European Investment] Fund: A new Danish garbage dump in the Czech Republic has become a big draw for local politicians from across the entire country. They are waiting in line to start working with the Danish development firm of Marius Pedersen on waste management.*

Hralec Kralove—We are standing in the dusk looking at what is presumably Europe's only garbage dump built on the top of a hill—quite unnoticed by motorists driving by and nearby villages.

The brand new garbage dump, which resembles a sports stadium more than a garbage dump, was built to Danish standards and is brimful of the most modern, computer-run facilities in West Europe. The first truckload of refuse which has just been dumped into the facility is not much to look at on the mammoth, well manicured gravel-covered expanse.

Marius Pedersen won the county's invitation to submit tenders for waste management against stiff competition from seven companies from the United States, Germany, Belgium, and Austria, among others, and currently the Danish company is conducting negotiations on waste management with about one-third of the biggest cities in the Czech Republic. Two projects in Slovakia, however, have been put on the back burner until political guarantees for the investment can be obtained.

"The Danes didn't just have the best solution, they also had the right attitude. From the start they have regarded us as equal partners and not treated us as if we had fallen from the trees. Finally, they put a great deal of emphasis on training workers," said Miroslav Kvapil, the managing director of the Danish development firm's Czech company, Marius Pedersen (CSFR), Inc.

Groundwater

Oddly enough, the garbage dump has reduced groundwater pollution within a three-kilometer radius. Indeed, rainwater no longer seeps through the magnesium residues found in the range of hills because the garbage dump is responsibly lined with a 20-centimeter thick layer of clay, weather-resistant plastic, and a layer of gravel. In the future rainwater will not seep through the hill but rather will be drawn out through underground pipes into a tank and through a modern water purification plant.

"It's almost a shame to spoil such a nice new garbage dump with refuse," Kvapil says with a smile, promising that at the official dedication in a couple of weeks the Gammel Dansk [beer] will not be missing....

With a 900,000-kroner investment, the IO fund has assumed 20 percent of the shares in "Bohemian Waste Management," one of a total of four Czech waste management companies which are part of the Marius Pedersen

(CSFR), Inc., holding company. Furthermore the city councils in Hradec Kralove and the nearby town of Pardubice are 20 percent shareholders, whereas the Danish-owned holding company owns 60 percent in each one of the four companies.

Kvapil belongs to the new generation of young, dynamic business leaders in the Czech Republic who emphatically sank the planned economy and have thrown themselves heart and soul into modern management and a market economy—not least thanks to a leadership course in Denmark arranged by the Industry Ministry.

He was formerly the vice chairman of the local county council's environment committee but was headhunted for the job as managing director of Marius Pedersen's Czech company which today is benefitting from Kvapil's extensive knowledge of the county and its politicians and problems.

Confidence

"Waste management is a question of confidence and a very sensitive area. You have to have the broadest possible consideration for the residents, but waste management is done on a purely commercial basis, since it is financed with a waste charge paid by users," Kvapil said.

The waste is carefully monitored before it is put into the pit, and each month the environment authorities receive a diskette containing all the details about the quantities and the composition of the waste that has been dumped together with the names of customers.

The new garbage dump, which cost barely 10 million kroner, is only the first phase of a comprehensive project. In one and one-half to two years, the dump will be filled with waste and a new dump is ready to receive waste—about 100 meters from the old dump. The plan is to open a new garbage dump every other year, and as things currently stand an area has been secured which will provide space for a total of 10 garbage dumps—i.e., enough for 20 years' worth of waste. As soon as the dumps are filled, they will be replanted with tree saplings to preserve the area's natural landscape.

But the visions go much further, since later on they want to introduce the sorting and recycling of household waste and the treatment of hazardous waste.

"Close cooperation between the private and public sectors is the perfect partnership, and I am proud to be in on this from the beginning. All of us have one common problem and that is waste. We have gotten right down to it and in record time built East Europe's most advanced garbage dump," said Martin Dvorak, the chairman of the county council in Hradec Kralove.

At the moment, Bohemian Waste Management is studying 41 new sites where new garbage dumps could eventually be located—and the next step will be to privatize the entire county's technical administration and thereby also its waste management, said Dvorak, who at 36 is one of the country's youngest and most forward-looking chairmen.

Premier Outlines Government Stance on Temelin Nuclear Plant

*LD2001184793 Prague CTK in English
1808 GMT 20 Jan 93*

[Text] Prague, 20 January (CTK)—The primary considerations for deciding the fate of future construction at the nuclear power plant in Temelin, South Bohemia, will be the need for electrical energy and the availability of alternative energy sources, Czech Premier Vaclav Klaus said after today's government session.

Klaus told a press conference that a final decision on Temelin is, will be and must be our decision. He was reacting in part to a telegram sent today by Austrian Minister of the Environment Maria Rauch-Kallat requesting a halt to construction and proposing bilateral cooperation in the search for alternative energy sources.

Klaus met with Rauch-Kallat in Vienna on December 15 and Salzburg on January 7, and said her position then was not more aggressively negative.

He added that a twice-postponed meeting of the Czech governments Council of Economic Ministers to discuss Temelin would take place within several days. The meeting should produce a basic recommendation of the government on whether or not to continue with construction of the power plant.

In response to a Slovak representative's assertion in Brussels that the question of Czech participation in settling the Slovak-Hungarian dispute over the Gabčíkovo hydroelectric plant on the Danube has not been officially answered, Klaus responded that the Czech Republic has no intention of concerning itself with the problem.

Greens Say Russia Ready To Accept Czech Nuclear Waste Again

*AU0402163793 Prague RUDE PRAVO
in Czech 28 Jan 93 p 3*

["alm"-signed report: "Green Party Says Russia Will Take Czech Republic's Spent Nuclear Fuel"]

[Text] Prague—The Russian side has changed its attitude and will move spent fuel rods from nuclear power stations in the Czech Republic to its own territory without any problems. This was announced by Jaroslav Vlcek, chairman of the Green Party and deputy chairman of the Liberal Social Union [LSU], at an LSU news conference on Wednesday [27 January]. According to Vlcek, in line with existing contracts, which are still valid, the Russian side is offering to deliver any fuel rods for nuclear power stations in the Czech Republic "and that at prices significantly lower than those charged by Westinghouse." He called on the government to consider these facts when deciding on the completion of the Temelin nuclear power station. Asked by RUDE PRAVO whether the Government has been officially notified of these matters, Vlcek replied: "Since the Green Party knows it, I assume that the government has at least as much information at its disposal."

Responding to Vlcek's statement at a Czech Government briefing on the same day, Vaclav Klaus said that he had never heard of the Russian side's offer. "I really cannot say

anything about it and do not quite understand how anyone could engage in such activity [without the government knowledge about it]," be said. He added that he does not know Jaroslav Vlcek.

SLOVAKIA

Government Blamed for Losing Gabčíkovo Diplomatic Battle

AU0402093393 Bratislava NARODNA OBRODA
in Slovak 2 Feb 93 p 3

[Olga Vavrova commentary: "Slovakia Is Silent....; The Truth About Gabčíkovo-Nagymaros Will Not Assert Itself Automatically"]

[Excerpts] The half-empty river bed of the Danube, this great European river, between Cunovo and Palkovicovo following the diversion of a major part of Danube waters to the Gabčíkovo feeding canal is of great evidential value in the indictment of Slovakia as the river's thief and violator of international law. It proves right those who accuse the authors and builders of that project of ecological barbarism. Hungary is summoning foreign journalists and diplomats to this section of the river for them to see with their own eyes....

The truth is quite different, of course.

This situation in the wake of the river's diversion to the turbines had been expected and the project of 1978 provides for work designed to eliminate the consequences of the changed water regime in the Danube's old river bed. In the division of labor on the joint project, this work fell upon Hungary, which, however, did not perform it, does not perform it now, and, most likely, will not perform it in the future either. Our experts have prepared effective solutions that would make it possible to double the rate of flow and turn the Danube's old river bed into the natural river that it was originally. Even EC experts appreciated this last November. Slovakia is unable to put these solutions into effect, however, because it lacks Hungary's agreement with its entry into the river bed, which is located in the border zone. The Hungarians do not even want to hear about this, in the same way as they refuse to fill the unused Dunakiliti water reservoir for the needs of the water regime because it would take out of their hands a trump card of such value as the present condition of nature in the Danube's original river bed.

Hence, the talks continue in London and Brussels with a minimal hope of ever arriving at some compromise. And even if some compromise were to be reached, it would have no validity for the Hungarian Republic because any compromise solution would run counter to the Hungarian Parliament's resolution (of April 1991) that talks may be held only on dismantling the Gabčíkovo-Nagymaros hydroelectric power project. Has the Slovak Government forgotten about this obstructionist resolution or has it completely yielded to the Brussels spell of quiet diplomacy and relies on our truth in the Gabčíkovo-Nagymaros issue being stronger and asserting itself automatically against the generally known activities of the Hungarian lobby in Western Europe, the U.S. Congress, and the U.S. Administration?

Last fall when the moment came for the most difficult decision on the fate of the hydroelectric power project, the Slovak Government incomprehensibly distanced itself from Gabčíkovo and left the issue in the hands of the disintegrating federal administration, whose attitude was marked by Czech ill will. Only in this way was it possible for the absurd agreement of London to come about and for the talks in Brussels to take place, in which expert arguments were put out of the running by our adversaries' political diplomacy.

Now that Slovakia has acquired independence and the status of a subject under international law, Gabčíkovo is, incomprehensibly, becoming an even more abandoned problem than it had been while in federal hands. We are going, and will keep going, to Brussels to haggle about the temporary regime on the Danube River under clear pressure from Budapest and its allies, unfortunately also in the EC, the aim of the pressure being to leave the feeding canal and the turbines in Gabčíkovo without water. So far the Slovak Government has not managed to issue a single diplomatic note, a procedure common between sovereign states, to draw the Hungarian Republic's attention to its duty to carry out the necessary adjustments in the old river bed to overcome the present bad ecological situation, for which Hungary is co-responsible. The EC is asking us and the Hungarians to show restraint, among other things. The Slovak minister of foreign affairs has indeed sent a directive to all representatives involved in the Gabčíkovo issue, telling them to show moderation in their statements. However, this "toning down" apparently is not recognized by [Hungarian Foreign Minister] Geza Jeszenszky, who is making statements on the project all the time and everywhere, last time in Israel, for example. [passage omitted]

In our country, jurisdiction over Gabčíkovo-Nagymaros has automatically been assigned to the department that is in charge of water management—the Ministry of Agriculture. Minister Baco is delegation head at international talks, a position formerly held by the Slovak prime ministers, Vladimir Meciar and Jan Carnogursky. Even if the poor minister wanted to, he cannot [accomplish anything]. Saving our desolate agriculture is beyond human capacity, and Mr. Baco is too occupied with that task to be able to do anything for Gabčíkovo-Nagymaros. This formal jurisdiction is absurd, when confronted with the massive, even "patriotic" involvement of members of the Hungarian Government and of the numerous staffs working on the case. We employ four people at the Office of the Government Commissioner, which includes Dominik Kocinger, the office chief. There a few more forlorn individuals feeling how the Slovak Government's continuing distance from the matter is dimming Slovakia's chances of holding its own in this diplomatic and political contest.

Gradually, Gabčíkovo-Nagymaros is somehow extending to the department of the Slovak Ministry of Foreign Affairs. One can feel that the bewildered and not very constructive atmosphere surrounding the problem of Gabčíkovo is also a product of the relationship between the Foreign Ministry and the government or, more precisely, between their leading representatives. Whatever the case, it should not happen that a Slovak Ministry of Foreign Affairs staffer becomes head of delegation to the Brussels talks who went to the last (once again fruitless) round of

the Brussels talks almost directly from New York, where he had been working for several years, and who familiarized himself with the problem of Gabčíkovo-Nagymaros while being driven to the Belgian capital.

Incidentally, while our delegation members plod along by car because airline tickets are expensive, the Hungarian delegation, headed by a state secretary, arrives at home a day earlier, hands out information, and interprets in its own way why Slovakia is silent....

HUNGARY

Expert Talks With Slovakia on Danube Dam Issue Unsuccessful

AU0802145893 Budapest MTI in English
2052 GMT 4 Feb 93

[Text] Budapest, 4 February (MTI)—No compromise was reached at talks with Slovak experts in Budapest on Thursday [4 February] as to how much of the water output will be returned by Slovakia into the original Danube bed at Rajka in northern Hungary. The Hungarian side would have been ready to accept the European Community's compromise proposal instead of the 95 percent provided by the London agreement. The EC proposal is for 50 percent of the water output to be returned in winter, and 60-80 percent in summer, depending on water quantity. Journalists learnt this from the heads of Hungarian expert delegations following the talks at the Foreign Ministry on Thursday evening.

The Hungarian side expected the Slovaks to come up with suggestions starting from the EC compromise. Instead, the Slovaks offered to return 25-30 percent of the water quantity, totally unacceptable to Hungary in view of the related damage to nature and agriculture, and to build bottom sills at Szigetkoz. Although the bottom sills are suitable to raise water levels in Szigetkoz also in the case of a smaller water quantity, the slowing stream would lead to the deposition of pollutants.

A new legal problem was the lack of agreement between the Czech and Slovak republics over appearance before the International Court of Justice. Hungary would agree to go to The Hague either with Slovakia alone, or with the Slovak and Czech republics together.

After abortive expert talks, many doubt the planned meeting between Hungarian and Slovak Foreign Ministry state secretaries can take place in Brussels on February 9 with EC participation.

Foreign Minister Views Relations With Neighbors; Bos Debate

AU0902125993 Budapest MAGYAR NEMZET
in Hungarian 6 Feb 93 p 6

[Interview with Foreign Minister Geza Jeszenszky by Jozsef Martin; place and date not given: "The Strategic Goal of the Hungarian Government Is To Develop the Best Relations With Neighboring Countries"]

[Text] [Martin] *With a slight exaggeration, we could also say that Hungarian diplomacy held a "Slovak week" in recent days. In your opinion, are there any chances of a*

strategic improvement in Hungarian-Slovak relations, which have deteriorated very much as a result of the Bos debate?

[Jeszenszky] In speaking about "deterioration," we must make it clear to everyone that this was not the work of the Hungarian Government, and we did not divert the Danube. Ever since we came to power, we have been constantly in favor of a negotiated solution to the Bos issue, and we have made it clear that this is not a political debate or the revival of some kind of old conflict. In defending the Danube, we are defending not only Hungarian interests, the interests of the Hungarian population on both banks of the river, but also the interests of the Slovak population living on the northern bank of the Danube; we are also convinced that the hydroelectric power station is extremely disadvantageous for Slovakia as a whole, also from an economic viewpoint, because its electricity production is very expensive. Various press reports have also drawn attention to important problems, dangers, and possible solutions. Thus, it would be possible to find a solution to the Bos issue if Slovakia were not making an issue of prestige out of this. However, I am also convinced that many people in Slovakia, perhaps more people than previously, think today that good relations with neighboring countries, including Hungary, are very important for Slovakia. We have mutual economic and political interests, and preserving the Visegrad cooperation is of mutual interest too. Some signs show that the campaign-style rhetoric that emerged in connection with the Bos affair in Slovakia is diminishing. The fact that the Hungarian replies have always been restrained might ease this process. I hope that this change in tone is taking place not only because Bratislava is now considering the position of the EC on the matter, but also because this shows a genuine change coming from the emerging foreign policy of this newly independent country that also accepts responsibility along with its independence. Therefore, it is impossible to avoid the Bos issue; nor should we allow the long-term and mutually important interests of Hungarian-Slovak cooperation to lose ground because of the quite alarming measures connected with the Bos issue or the issue of the Hungarian national minority living in Slovakia.

[Martin] *The Hungarian-Slovak debate has probably contributed to the strong emergence of the view that the future of the Visegrad cooperation is in danger. Some declarations made in Prague which belittle this cooperation and stress the Czech Republic's clear commitment to the West are encouraging these opinions.*

[Jeszenszky] Along with the historical ties and economic interests, as well as free trade considerations, the basis of the entire Visegrad cooperation is our mutual commitment to the West and the deepening of our relations with the EC. Therefore, no matter what it stresses, the concept of Czech Premier Klaus is not very different from the Hungarian and Polish positions. The Czechs say that we should refrain from making an institution out of this cooperation or expand it with military considerations, and thus present it as some kind of alternative to the EC. There is nothing new in this claim, because we said the same thing when we founded this cooperation, and there is not a single secretary working in the "Visegrad" offices. Thus, in the form

they appear, Klaus's concepts are nothing new, and both Budapest and Warsaw share the essence of these concepts.

[Martin] *The fact that Gyula Horn, who recently resigned from the position of chairman of the Foreign Affairs Committee of the Hungarian Parliament, submitted a new plan in Vienna, a plan aimed at developing a closer cooperation between Austria, Slovakia, Slovenia, and Hungary, is probably connected with the speculations about the future of the Visegrad cooperation. What is your opinion about this?*

[Jeszenszky] I highly appreciate any bilateral or multilateral initiative that emerges either in the framework of the Visegrad cooperation or within the Central European Initiative that is also very important for us. However, I do not think that we should create new forums in addition to the existing ones, and I think that Gyula Horn is also aware of this. A party policy interpretation is the most obvious explanation of his initiative: The successor parties of the former Communist parties would like to legitimize their new socialist clothes, and they want to strengthen their international acceptance by strengthening their ties with the authentic Austrian Social Democratic Party. However, if we consider the cooperation of countries or governments, there is no need to highlight and concentrate on the aforementioned four countries. The Central European Initiative provides a rather good framework, and I would not like to see Poland, the Czech Republic, or even Croatia being left out of this. The Visegrad cooperation will also continue because Austria is advancing toward the EC on a different trail, and we cannot get on this train. Nor would this be realistic in view of the current state of our economic restructuring. However, several high-level meetings between the EC and the Visegrad group are currently in preparation, and the very mechanism of these meetings denies the fact that Visegrad could be discarded.

One more thing about Gyula Horn's proposal: As I mentioned, I only see any sense in this proposal under limited circumstances, and I find it strange that Horn used extremely harsh words in connection with the reservations brought up by myself and by others too. A personal and relatively rare indirect debate took place here and, in connection with the World Economic Forum in Davos, Gyula Horn also got into a discussion with [Finance Minister] Mihaly Kupa. In my view, Hungarian foreign policy can very well use the international links and the broad experiences of others, including that of Gyula Horn, but Horn's condescending and offensive terms say a lot in themselves. I feel that Horn has not been able to process for himself the events in the foreign affairs committee or that, as a result of the change of regime, his foreign political role has changed and, in spite of his resignation gesture, he went through these with resentment. In my view, it is very important in politics to separate our feelings from our words and especially from our steps and actions. Therefore, all this cannot disturb a kind of general consensus on foreign politics but, to put it mildly, Horn's often caustic style is not mine and I must say that it does not fit in with the usual international norms. It is also significant if, at international forums, a representative of a small country needs interpreters because he does not speak any of the major world languages.

[Martin] *Hungarian-Slovak relations are going through a difficult period, and we can probably expect a long-lasting*

war with many dangers on our southern border. In this situation, Hungarian-Romanian relations are likely to increase in importance. Do you agree with this and does the Foreign Ministry have a strategic plan generally to normalize these relations?

[Jeszenszky] On the basis of our published program, establishing the best possible relations with all our neighbors is the strategic goal of the Foreign Ministry and of the government. The Hungarian leadership has made very serious attempts to improve relations with Romania since the changes there and the fall of Ceausescu. In my view, relations with Romania are not gaining in importance simply because of relations with our neighbors—although this is a valid aspect—but relations with Hungary have gained in value for Bucharest because it could see that the national minority policy is an important element in getting closer to Europe and being included in the processes of integration. In the past few weeks, we have seen gestures in words and interviews and I find it very important that Foreign Minister Melescanu met Bela Marko, the newly elected leader of the Democratic Union of Hungarians in Romania. However, in my view, the kind of actions that are being implemented by Romania in bilateral relations are very important for overall Hungarian-Romanian relations and these cannot really be separated from the future of the Hungarian minority although they do not only concentrate on this issue. The temptation might be great for both sides to produce a sudden and rapid improvement in bilateral relations for the local and international consumption through a few spectacular meetings. However, in my view, this is only treating the symptoms. It is important for a real rapprochement to take place, and people in Romania are very well aware of what is needed to achieve this. Hungary will be a partner to this.

[Martin] *According to some views, the constant suspicion of certain Romanian political groups as to the Hungarian intention to change its borders could be arrested by a national statement by the six parliamentary parties to the effect that Hungary renounces even the peaceful adjustment of the borders for once and for all. What are your views on this?*

[Jeszenszky] In the past two and a half years, the freely elected Hungarian Parliament and the government have made several statements making it clear that Hungary respects all international documents, including the peace treaty and the Helsinki Final Act. However, it has to be seen that the issue of the borders has been pushed into the foreground by Romania rather than by Hungary, although this has probably escaped the attention of most observers. I am convinced that Bucharest was guided in this by domestic political considerations rather than by real or irrational fears. Neither in Romania nor anywhere else in the world can sensible people think that a Hungary with 10 million people can endanger the sovereignty of a Romania with 23 million, and the military conditions only confirm that it is not realistic to talk about any kind of threat. However, unfortunately, all the Hungarians of Transylvania feel threatened—not without reason—and it is not only [Cluj Mayor] Funar's extremists who are to be blamed for this. Can Hungary halt this situation through any kind of statement? Ten years after the 1945 peace treaty, which was the last one to define the Hungarian-Romanian

border, Janos Kadar had already confirmed in a speech in Tirgu Mures that Hungary did not have territorial claims on Romania. This speech is well remembered in Transylvania because it was followed by mass arrests and the Bolyai university was closed down.... It can be established that this speech by no means improved the situation of the Hungarians in Romania. Many people, especially in Transylvania, think that, rather than creating positive counter-gestures, another Hungarian gesture would only give a "free hand" to Bucharest. I am not saying that this would definitely happen, but such fears do exist. The decision-makers and those who form public opinion also have to take these fears into consideration. Therefore, in my view, the whole issue of the borders is an artificially exaggerated problem. The peace treaties and the Helsinki Final Act provide a perfectly adequate framework for settling this issue. In my view, we would first need to take actual steps in economic cooperation or by creating new border crossing points, because conditions have been unbearable for a long time on our common borders. These kinds of steps can be really effective in moving bilateral relations in a positive direction.

[Martin] It has become obvious that Hungarian security policy could not fully rely on the NATO of the North Atlantic Cooperation Council. However, according to some opinions, problems connected with the Hungarian national minority are burdening our relations with our neighboring countries, and we should also do more to promote economic cooperation, among other things, also because of security policy interests. Are these realistic opinions, or are they knocking on open doors?

[Jeszzenszky] I do not see a necessary connection between the two. Undoubtedly, we need to strengthen our economic cooperation and we also need to implement and expand free trade as soon as possible. This whole region was a huge common market 100 years ago, and many areas became secondary regions and several busy roads became almost cul-de-sacs and railroads ceased to exist after World War I; all this was extremely harmful. The restoration and revival of these old economic routes in itself could lead to some kind of economic revival and prosperity. Therefore, this is a very important direction, and the Hungarian Government strongly supports and represents this idea. I am sure that the implementation of such a program will cool the emotions and this also satisfies mutual and realistic interests. Money and financial interests will probably prove to be stronger than emotions. Therefore, I regard these steps as desirable from such a viewpoint too; however, in analyzing both the domestic and foreign aspects of the national minority issue, I think it is extremely important to make it clear that it is not Hungary that is "creating" the national minority conflict. After oppression, the national minorities want to make use of the opportunity of greater freedom but, unfortunately, they are also afraid, not only of the declarations or the inadmissible steps of some politicians, but also for their future. Ethnic cleansing did not start in Bosnia today, and the Council of Europe has also confirmed that artificial modification of ethnic conditions is totally unacceptable. However, one must also take into consideration that ethnic conditions have changed considerably in the areas inhabited by Hungarians or in mixed areas in recent decades. Because of this process, the national minorities are afraid

of their own disappearance, even if this could take 100 or 200 years; thus, this process must be halted by all means. This lies behind of the national minorities' efforts for self-government and autonomy. These efforts have not been devised by the Hungarian Government and I firmly reject the idea that we might be the ones who suggested them.

[Martin] The decisionmaking activity and personnel policy of the Hungarian Foreign Ministry have often been criticized lately. What is your opinion about this?

[Jeszzenszky] I think that, just like Parliament itself, the Foreign Affairs Committee does not "conduct" the policy itself, but it prepares laws and, also because of the duration of its activity, it is unable to carry out day-to-day work. Therefore, I consider some opinions to be unrealistic, such as the recent statement of the newly-elected chairman of the Foreign Affairs Committee, Laszlo Kovacs, that we should constantly coordinate our steps with the Committee. The was opposition repeatedly pointing out last year that I failed to discuss some of my proposals with them. I even daresay we made no proposals whatsoever either to NATO or the EC or a neighboring country without relying on the agreement of the political parties, at least at the level of the party programs. However, one needs quick reactions in everyday politics and, therefore, top diplomacy—in the EC too—has made incredible progress these days. There are often no opportunities for daily contacts; nor are they necessary. The government takes responsibility for diplomatic moves.

As for the critical observations regarding the activity of our personnel, criticism mostly voiced by former members of staff who left the Foreign Ministry voluntarily, the claim that almost half of the apparatus has changed is totally unfounded. About a quarter of our staff has changed in the last two and a half years, including natural wastage. I think it is a justified demand that the ambassadors who represent the new Hungary, especially in Western capitals, should be people who did not use to regard NATO and the democratic countries as enemies, and who also know these countries well, including their language and culture. The overwhelming majority of the new diplomats appointed after successful examinations and in the wake of the introduction of fresh blood into the diplomatic corps have been carrying out their duties excellently and, therefore, it is wrong and unfair to claim that they mean well but are mere amateurs. I do not know of any case where we have recalled a good diplomat without offering him a new position in line with his talents. I do not like this differentiation between the "old" people and the "new" people, but I must point out that there is only one "new" deputy state secretary and two "new" heads of department in the Foreign Ministry, while the 30- to 40-year-old generation of the "old" staff are now in leading positions and enjoy the full confidence of the government. Thus, both those who claim that there has been too little change in the ministry and those who claim that there has been too much change are wrong. Perhaps it is also good that there has been an increase in the percentage of arts and sciences graduates as well as in the percentage of women among our staff. I do not think it is justified to make any considerable changes to our personnel policy and the composition of the foreign service either now or after 1994.

[Martin] In your opinion, is there a six-party and national consensus in our foreign policy?

[Jeszenszky] I do not think that there are any conceptional differences between the government and the opposition on the main trends of Hungarian foreign policy and in evaluating the tasks we are facing. This also derives from the programs of individual parties; therefore, this does not require any formal coordination. Some emphases might be different and some steps might be interpreted differently, but I think that the consensus has become even stronger lately. I think it is a promising development that part of the opposition seems to have abandoned their former practice of taking our internal political debates abroad. In the past, the Hungarian Socialist Party [MSZP] accused the government of neglecting our eastern contacts. Our multilateral cooperation with the new Yeltsin leadership proves exactly the opposite. It seems that the opposition parties who greatly prefer to call themselves liberal also admit that the government has a balanced orientation. In the current flexible international situation full of unpredictable factors, it is important to have a common and harmonious representation of our national interests, which is more important than at any time since 1945.

POLAND

Report Reveals Health of Poles 'Deteriorating Alarmingly'

AU0802133393 Warsaw ZYCIE WARSZAWY in Polish 5 Feb 93 p 1

[Luiza Kowalska report: "Statisticians Raise Alarm"]

[Text] Fewer children were born in Poland in 1992 than in any other year since the war, says a report by the Government Census Bureau published yesterday [4 February]. At the same time, mortality is still high—almost 400,000 people died in 1992. About 13 million Poles live in areas of environmental danger.

The health of the Polish population is deteriorating alarmingly, says the report, which bears the title "Demographic Situation of Poland." The reasons are bad living conditions, eating habits, poor personal hygiene, smoking, alcohol consumption, and drug abuse. It is reckoned that about 13 million Poles live in areas of environmental danger. Several million Poles are actually considered to be living in areas with "high concentrations of toxic substances."

The diseases from which Poles are in greatest danger are those of the circulation and of the digestive, respiratory, and nervous systems, plus tumors and poisoning. Cases of infectious hepatitis are not diminishing, and cases of tuberculosis are twice the European average.

Almost half the deaths in Poland in 1992 were caused by diseases of the circulation, especially massive strokes, which affected men more than women. Also, more men

died of tumors than women. Such deaths occurred especially in southern, western, and northern regions, and in the large conurbations. On the other hand, more women than men died of poisoning and accidents, especially road accidents.

Poland, continues the report, is one of the few countries in Europe in which life expectancy is falling. Statistically a male Pole today lives to the age of 66, and a female Pole 75.

Because of the fall in the number of births, the high number of deaths, and the increase in emigration, the population growth rate has slackened, which could result in a fall in the population. Real population growth is already at its lowest level since the war.

ROMANIA

Environment Minister Discusses Ministry's New Structure

AU0502154593 Bucharest ROMPRES in English 1409 GMT 5 Feb 93

[Text] Bucharest, ROMPRES, 5/2/1993—"The government has recently approved a new structure of the Ministry of Waters, Woods and Environmental Protection, with a wage and legislation department for each of its three sections, which is going to forward measures to encourage economic agents to protect the environment and have good use of waters and woods, sector minister Aurel Constantin Ilie told the weekly ADEVARUL ECONOMIC. The ministry has only given impetus to legislative and administrative steps and probably that is what it is going to do in the period to come, as the financing of technologies apt to protect the environment falls to economic agents.

Parliament has been forwarded an environment protection bill, but the current laws allow them to use part of the enterprises' profits for the protection of their environment. "Unfortunately there are many economic agents who do not know that the laws have such stipulations, and I have realized that neither does all the staff of our ministry.

The present means to force environmental steps to be taken are not very efficient," added Minister Aurel Constantin Ilie. "Existing fines are rather low, particularly for companies making high profits, which can easily include them in their costs. "I think the Ministry of the Interior should set up an ecologic police and we should assist it to this end. It would be mainly intended at putting an end to the "migration of noxious substances", so adroitly organized by the Mafia active in the field," mentioned the minister of the environment. He said that considering Romania's development level, tough measures, such as the closure of polluting units might bar economic activities. The consequences of such measures have to be established first, and next the economic agents concerned should be asked to invest part of their profit in pollutant-free technologies, mentioned the minister.

REGIONAL AFFAIRS

Colombia, Ecuador Presidents To Sign Galapagos Declaration

PA2701145093 Quito Voz de los Andes in Spanish
2200 GMT 26 Jan 93

[Text] Colombian President Cesar Gaviria will arrive in Quito on 29 January on an official visit to sign the Galapagos Joint Declaration, which will reiterate strengthening bilateral relations, defending the environment, and analyzing Colombia's and Ecuador's common problems, Ecuadoran Foreign Minister Diego Paredes has announced.

[Begin recording] [Paredes] Everything is set for the visit. President Gaviria will arrive early in the morning, we do not know yet exactly at what time, but we think it will be around 1000. He will go first to the presidential palace for a meeting. Some documents will be signed at the palace, particularly those having to do with air traffic between the two nations. The two presidents will probably sign a joint declaration and other documents. In the afternoon, the two presidents and their respective delegations will travel to Galapagos.

[Reporter] Mr. Minister: Will there be a joint declaration that could be called the Galapagos Declaration?

[Paredes] Other documents, which will be studied at that time, will be signed at the Galapagos. These documents refer to the defense of the environment.

[Reporter] Is there going to be a joint declaration?

[Paredes] Yes, it will be a joint declaration on a policy that the two countries will commit themselves to carry out in defense of the marine environment.

[Reporter] Is it different from the agreement on the neighbor commissions....

[Paredes, interrupting] No, the neighbor commissions were created specifically to seek greater agreement between the countries. Evidently, each one has a wish to defend its interests. Nonetheless, the common interest is greater and closer ties.

[Reporter] Has a delegation been appointed?

[Paredes] The delegation accompanying the Colombian president includes—in addition to his wife and two children, who want to see our country and enjoy the Galapagos Islands—the foreign minister, and possibly the economy minister and the foreign trade minister and presidential advisers.

[Reporter] Will he depart for Colombia directly from the Galapagos?

[Paredes] He will return probably via Guayaquil or Quito. It all depends on the weather on 31 January.

[Reporter] When is President Gaviria scheduled to arrive in Quito?

[Paredes] He will arrive at approximately 0900 or 1000 on 29 January. [end recording]

ARGENTINA

CNEA Reportedly Sending Nuclear Waste to Mendoza Province

PY1501223893 Buenos Aires TELAM in Spanish
0035 GMT 15 Jan 93

[Text] Cordoba, 14 Jan (TELAM)—The Foundation for the Defense of the Environment [Fundacion para la Defensa del Ambiente] (Funam) has reported that the National Commission for Atomic Energy [CNEA] branch in Cordoba is reportedly sending highly dangerous nuclear waste to Mendoza.

Funam stated that 3,000 drums containing nuclear waste have reportedly been buried in the Mendoza Province township of Sierra Pintada.

The morning newspaper LA VOZ DEL INTERIOR today published the charges, which Funam President Raul Montenegro filed with Prosecutor Juan Sanmartino on 11 January.

This is the third charge that has been made public against CNEA in the past few months. The first concerned a study of uranium prospecting at a mine in the Traslasierra Valley, and the second the possible construction of a nuclear waste dump in the Salinas Grandes zone.

The newspaper states that "Cordoba CNEA employees reportedly neither complied with legal regulations nor had the approval of province authorities" to transfer the waste to Mendoza.

Juan Schroeder, director of the ecological organization Greenpeace, told TELAM that Mendoza Province sends Cordoba a series of mineral elements for processing purposes, and that they are sent back to the province in keeping with existing legal regulations.

Schroeder stated that the incident occurred "because the Health Ministry in Mendoza reported that they were receiving back more material than they were sending. This gave rise to suspicions that materials from the Los Gigantes uranium reserve were being added to the shipment. This reserve was closed a long time ago because it had been contaminating groundwater supplies."

Sanmartino submitted the case to judge on duty Juan Jose Moresi, who in turn sent the files to the Mendoza Province courts, as the most serious incident (the burial of the waste) took place in Mendoza Province.

Concerning the uranium mine in Traslasierra, 10 townships from Cordoba declared themselves "nuclear test free" zones to prevent mine prospecting from intensifying.

Provincial Deputy Carlos Pereyra submitted to the Chamber of Deputies a draft declaration in which he requests that the executive branch order the Cordoba Mining Secretariat to adopt preventive measures with respect to the prospecting the CNEA is apparently conducting in the area.

Funam reported that the CNEA is analyzing the possibility of installing a nuclear waste dump in the Salinas Grandes zone.

In a communique signed by Montenegro, Funam states that this institution "herewith makes public the charges made by residents and the unofficial report provided by CNEA employees who participated in the mineral prospecting."

Heavy Water Leak Reported at Atucha-1 Nuclear Plant

*PY2001190593 Buenos Aires TELAM in Spanish
1550 GMT 20 Jan 93*

[Text] Buenos Aires, 30 Jan (TELAM)—Engineer Juan Carlos Duarte, the manager of the Atucha-1 nuclear plant, told TELAM today that there was a leak of heavy water from one of the reactors of the plant last weekend. He added that the accident "does not imply any risk" and the situation is under control and will be repaired.

Duarte denied reports that the nuclear accident in Atucha was serious and explained that a small amount of heavy water leaked from a reactor that had been deactivated on 15 January because a problem had been detected and was being repaired.

The manager of the nuclear plant, which is 100 km northwest of the Federal Capital, told TELAM: "The plant is in good working condition, the activity is normal and we prefer to talk about a (heavy water) leak and not a spill because we can recover it."

BRAZIL

Franco Approves Law on Atlantic Forest Exploitation

*PY0502154293 Brasilia Voz do Brasil Network
in Portuguese 2200 GMT 4 Feb 93*

[Text] President Itamar Franco has signed a decree regulating the exploitation of the Atlantic Forest.

Environment Minister Coutinho Jorge has stated that this new law will allow state governments and environment councils to carry out a sustainable development project in the region.

[Begin recording] This law will make it possible to solve urban conflicts that exist in that region, it will be possible to implement a sustainable development program for various species of flora, including palms, the trumpet tree, and even ornamental flowers. Until now their exploitation, although practically prohibited, was being done in a clandestine manner.

This law will allow the implementation of important works which were previously prohibited. These project will now be approved by the state councils and endorsed by the National Environment Council. This law represents a new, modern, realistic approach that takes into account the theory of sustainable development as approved by Rio-92 [conference on ecology and development]. [end recording]

Minister Coutinho Jorge also stated that this new law will allow the resumption of work to broaden Highway BR-116.

ST LUCIA

Geothermal Energy Project Postponed

*FL0902182093 Bridgetown CANA in English
1405 GMT 9 Feb 93*

[By Ric Mentus]

[Text] Castries, St. Lucia, Feb 9 (CANA)—It seemed the natural and sensible thing to do at a time of high energy costs - harnessing the island's popular "drive-in volcano" to produce electricity, at least for the people who lived in its shadow.

But after six years of endeavour, the attempt to generate geo-thermal energy from the hot springs of Soufriere on St. Lucia's south west coast, 27 miles from Castries, has ended in failure and the relegation of the project to the back-burner of government's priorities.

It all began in 1986, Aloysius Barthelmy, principal assistant secretary in government's Central Planning Unit, told CANA.

At the time, the government received two grants, one for US\$2.5 million dollars from the United States Agency for International Development (USAID), and another for US\$3 million dollars from the United Nations to explore the energy potential of the Soufriere.

The first attempt was a 7,261-foot deep well at a site called Belford to check the steam potential of the area. Unfortunately, this effort turned out to be a dry hole. So another well was sunk about half mile closer to the site of the bubbling hot springs that visitors flock to Soufriere to see, and which earned it the name of "the world's only drive-in volcano".

This time the effort met with a mixture of wet steam (90 percent) and water.

The reservoir from which this material was coming was estimated to be running at a temperature of 292 degrees Celcius, and the experts predicted that it would have been able to produce about 10 megawatts of electricity, enough to provide energy for neighbouring villages of Soufriere, Vieux Fort, Choiseul and Labourie with a total population of about 34,719 in 8,086 households.

But after two weeks of operation, the discharge lost its water content and the steam became very dry, emitting a loud noise as it came out. The leaves of nearby trees were badly seared, and although they recovered later, it was decided to stop the operation because of environmental problems.

"But the showing was good enough," Barthelmy said, "to attract some American companies in the energy field. However, negotiations with them to commercialise the project broke down because the Americans wanted total control of the operation which the government refused to do because it was seen as a matter of national interest."

At this stage, the project which was being handled by the Planning Ministry, was handed over to St. Lucia Electrical Services Limited, the government department responsible for electricity generation.

"They hired consultants from New Zealand, a country with a long tradition in geo-thermal energy production, to test the well and evaluate its long-term possibilities. But they discovered that a damaged casing in the lower section of the well was blocking the flow of steam," he said.

Although the New Zealanders went home for additional equipment, they were never able to free the obstruction, and that's where the effort came to a halt some time in 1991.

Barthelmy said it was projected that if the project was successful, it would have, over a 30-year period, saved the government about US\$250 million dollars in foreign exchange.

To get it going again would call for another injection of foreign aid either to drill a new well or to unblock the existing one.

VENEZUELA

Foreign Minister on Problem of Brazilian Gold Prospectors

*PA0602161893 Caracas Venezolana de Television
Network in Spanish 2350 GMT 5 Feb 93*

[Report by Anerys Gonzalez]

[Text] Foreign Minister Fernando Ochoa Antich has acknowledged the problem of Brazilian gold prospectors. He stated that illegal mining activities can only be eradicated if Brazil and Venezuela improve relations.

According to the Venezuelan foreign minister, attempts to end the illegal exploitation of minerals in Bolivar State have been positive. However, the remoteness of the area and the maneuvers used by Brazilian prospectors to enter our country create a difficult situation.

Despite those difficulties, military raids recently resulted in the arrests of 41 Brazilian prospectors, who will be tried for violating the Environment Law.

It appears that the problem is no longer the eradication of the prospectors from the area, but rather, to reach a satisfactory agreement with Brazil for a timely solution. A report published on 5 February by the national press highlights the statements by the candidate to occupy the post of Brazilian ambassador to Venezuela, who reportedly said that the Brazilian and Venezuelan military officers are interested in maintaining the atmosphere of confrontation. The Venezuelan Foreign Minister has requested a prompt explanation.

[Begin Ochoa Antich recording] Following the instructions of the president, I have instructed the Venezuelan ambassador to Brazil to obtain the official opinion of the Brazilian Government in order to determine if the statements attributed to the ambassadorial candidate of Brazil to Venezuela are true.

If these statements are true, the Venezuelan Government will study them and will adopt the corresponding diplomatic action. [end recording]

For the foreign minister, the Venezuelan Armed Forces must continue to eradicate the presence of Brazilian prospectors in Venezuelan territory, thereby exercising our national sovereignty.

REGIONAL AFFAIRS

Israeli Press Conference on Multilateral Environmental Talks

London AL-QUDS AL-'ARABI in Arabic 27 Dec 92 p 5

[Report from Jerusalem: "'Scenario of Optimism' Among Countries of the Region Under Conditions of Peace; Head of Israeli Delegation to Environmental Affairs Committee Receives Palestinian Newsmen"]

[Text] Israeli officials met with Palestinian journalists at the Israeli Ministry of Foreign Affairs at noon two days ago to discuss the "scenario of optimism" under conditions of peace that was advanced at the environmental affairs committee of the multilateral talks.

Yisra'el Peleg, head of the Israeli delegation to the environmental affairs committee, which met in The Hague on 26 and 27 November, said that the talks involved constructive discussions of certain significant environmental issues that would be in the interest of the people of the region. He pointed out that the issues transcends borders and that therefore they should be discussed face to face.

Peleg said yesterday before a group of Palestinian journalists that the UN representative has commended Yitzhaq Rabin for supporting the idea of dispatching experts to the occupied territories to undertake a number of environmental studies.

The Palestinian representatives at the talks vehemently criticized this statement, emphasizing that the Palestinian people's correct address is at their legitimate leadership and not in care of the occupying authorities. The UN representative retracted his statement and formally apologized before the Palestinian delegation to the committee.

The Israeli delegation advanced several plans for regional environmental cooperation, such as the subject of desertification, but found no responsiveness from the attendees, who emphatically asserted that there would be no regional cooperation or progress in the multilateral talks without progress in the bilateral talks.

Peleg reviewed the issues discussed at the talks—environmental management (led by Japan), the Gulf of 'Aqaba (led by the United States), marine habitats (led by the European Community), and environmental surveys.

He said that the Dutch advanced a successful project for environmental surveys in the Gaza Strip similar to those conducted in al-Fayyum region in Egypt.

The Dutch welcomed a Palestinian invitation to undertake comprehensive environmental surveys of the occupied territories.

A Dutch team is currently visiting the occupied territories to prepare for those surveys.

The head of the Israeli delegation to the environmental affairs committee said that the committee had distinguished itself because the various parties to it have worked together. He added that all of the parties, including the Palestinians, Jordanians, and Israelis, were sitting in a crowded lobby discussing the Dutch proposal on environmental surveys. He said that the agenda called for ancillary

discussions with the Palestinians and that those discussions have not taken place. He insisted that all discussions take place at the meeting hall.

Consequently, all of the talks were held within a single general session. The matter of environmental surveys, agreed upon by the Palestinians and the Israelis, attracted the attention of other regional parties. The Israelis emphasized that the Dutch Government and the European Community must coordinate any activity they undertake in the occupied territories with Israel. However, Holland and the European Community asserted that they would not coordinate with Israeli authorities and would work directly with the Palestinians, but notify Israel of their activities.

Moshe Rabin, deputy director general of information for the Israeli Ministry of Foreign Affairs, said that multilateral talks are no substitute for bilateral negotiations.

It was pointed out that as environmental talks came to a close, the parties to the Environmental Affairs Committee had agreed to the following:

- A workshop on pollution to be held in the United States early in February 1993.
- The Japanese will sponsor a seminar in Japan to complete some of the workshops that were begun.
- The Dutch proposed an environmental survey of the region, especially Gaza.
- The Italians will sponsor a seminar on solid waste.

Rabin asserted during the meeting that "the agreement requires all the parties to plan and to gather data. When the time comes, we will be able to work together on environmental projects."

It should be mentioned that the Palestinians declined to participate in the Environmental Seminar in Tokyo because of restrictions placed on the Palestinian people. The Palestinian delegation emphasized at the meeting in The Hague that all restrictions should be lifted on Palestinian participation in all workshops and seminars. The chairman of the working group pledged to bring up the matter at the next meeting of the steering committee and to discuss it with the conference sponsor.

Rabin said: "I have participated in the Tokyo and Hague meetings. We had the opportunity during the two meetings to trade experiences and get acquainted with the thinking and concerns of all the delegations."

He added that the Jordanians are seriously dealing with certain issues of environmental awareness.

ALGERIA

Algiers Automobiles Produce 'Alarming' Pollution Levels

93WE0191B Algiers LE SOIR D'ALGERIE in French 15 Dec 92 p 5

[Article by B.T.: "Car Pollution in the Capital at a Critical Level"]

[Text] Among the many environmental problems caused by human activity, air pollution poses the greatest danger. According to the information bulletin published by AUTA

[Algerian United Taxi Association], "air pollutants are generated by a wider range of sources. Worldwide statistics show, however, that road traffic is the leading source of air pollution (70 to 80 percent), of which four-fifths are produced by light vehicles."

The only data available for Algiers show that automobiles are the main cause of the city's air pollution and that it has

reached an alarming level. Urgent action must be taken to combat this scourge of modern times.

The table below presents the annual averages recorded for the most dangerous components of automobile exhaust at various tracking locations in Algiers and compares them the annual averages tolerated in Switzerland and Europe.

Gaseous Emissions in 49/m ³ [sic] Annual Average				
Location	NO ₂ *	Lead	Particulates	Vapors
Square 1 May	53.1	3.8	247.7	173.5
Main Post Office	42.8	1.1	136.5	87.9
Bal-El-Oued	32.2	0.9	114.3	71.6
Ben Aknoun	8.9	0.22	57.0	
Switzerland	30.0	1		
EEC	80.0	2		

* nitrous oxide

To protect the city of Algiers from the harmful effects of congestion and air pollution, the Transportation Users Association of the wilayat of Algiers recommends measures that have already proven effective in the developed countries (Switzerland, Italy, the Netherlands, and others).

For the short term, it is recommended that a traffic control plan granting priority to mass transit and pedestrians be enacted. Other proposals are to curtail the use of private automobiles by restricting street parking; reassess the road network modifications currently planned, after conducting an impact study; halt plans to build an interchange at Square 1 May/ALN; widen Route CW 13 (Bachdjarah); and make use of alternative fuels (Sirghaz).

Medium- and long-term solutions include rapid construction of a subway in Algiers; a tax on fuels and tobacco to finance mass transit projects; the implementation of a transportation plan with priority on the development of mass transit.

EGYPT

World Bank To Lend Funds for Tourism, Environment

NC2701065993 Cairo MENA in Arabic
1950 GMT 26 Jan 93

[Excerpts] Cairo, 26 Jan (MENA)—Egypt and the World Bank this evening signed three agreements in accordance with which the bank will lend Egypt \$130 million for a project to develop the basic structure of the tourism sector and environmental protection. [passage omitted detailing the three agreements]

The loan will be repaid over 20 years, including five years' grace, with a variable interest rate averaging 7.43 percent and a commitment charge of 0.25 percent.

INDIA

Thermal Power Plants Reluctant To Comply With New Norms

93WN0230A Calcutta THE TELEGRAPH
in English 3 Dec 92 p 10

[Article by Seema Paul]

[Text] New Delhi, Dec. 2—The Union environment ministry's threat to close down industries which fail to meet pollution control standards by the year-end is being treated with disdain by the thermal power units in the country.

Of the 29 power plants which were set up after 1981, only four have initiated steps to check pollution, according to sources in the Central Pollution Control Board (CPCB).

Even these units may not be able to complete the process by December, when the deadline ends, the sources add.

The power plants' reluctance to comply with the new norms has created a feeling in industry circles that the ministry may not be able to enforce its directive and would have to extend the deadline once again. It has already done so twice before.

The thermal power plants are obviously taking advantage of the fact that their closure will hurt the common man and the country's economy.

None of the post-1981 power plants in the country can be declared environment friendly, as even the "cleanest" among them are meeting only either of the emission and effluent standards. Coal-based thermal power plants create two kinds of pollution. They generate a lot of fly-ash, which, if not arrested with the help of electro-static precipitators (ECP), becomes suspended particulate matter (SPM) in the atmosphere and leads to lung, skin, eye and nose diseases. Fly-ash can also pollute water.

The second type of damage thermal power plants can cause to the environment is by discharging hot water into rivers, killing fish and plant life.

The law demands that this water be cooled before being released by power plants. Cooling towers need to be installed in order to achieve.

While the power plants at Panipat, Ghunsawal, Chandrapore, Titagarh and Calcutta are meeting effluent standards, or, in other words, are cooling their water before discharging it, those at Ukaai and Anapara in UP [Uttar Pradesh], are not throwing up fly-ash into the atmosphere.

All the others, including those in West Bengal, are defying the law with impunity, on the plea that they do not have adequate funds to install ESPs.

Interestingly, many plants have not even taken the measures which would not cost them anything.

For example, power plants could easily supply the fly ash free of cost to units manufacturing cement and bricks from them. Though a decision in this regard was taken some time ago, the power plants are still reluctant to part with their waste.

Complaints have been received in this regard by both the Union environment and power ministries. But at some places, the failing has not been on the part of power plants.

In the case of Rajghat thermal power plant in Delhi, for example, the Cement Corporation of India had signed an agreement to use 300 tonnes of fly ash every day, but so far, it has been able to utilise only 15 to 20 tonnes daily.

Two exceptions in this regard are the Kolaghat thermal power station in West Bengal and the Badarpur station in Delhi.

While the brick manufacturing unit inside Badarpur station is being put up by the Thapar group, state-owned West Bengal Power Development Corporation (WBPDCL) has taken the initiative in Kolaghat.

So heartened is the WBPDCL at the market response to fly-ash bricks, that it now proposes to set up six brick kilns to utilise the entire fly ash emission from the power station.

There is a big demand for fly ash bricks because they are stronger than red bricks.

Environment Minister Gives Cost Estimates for CFC Switchover

*93WN0229A Calcutta THE TELEGRAPH
in English 5 Dec 92 p 6*

[Text] New Delhi, Dec. 4—India would require an investment of Rs [Rupees] 1,500 crores to Rs 2,000 crores (about \$6 billion) to switch over from ozone-depleting chlorofluorocarbons to safe substitutes.

Chlorofluorocarbons (CFCs) are manmade substances which are used as coolants in refrigerators and air-conditioners. Scientists have discovered that CFCs seriously damage the thin ozone layer in the atmosphere which protects all life forms on the earth against radiation from the sun.

Giving Indian estimates for the switchover, the Union environment minister, Mr Kamal Nath, who was recently elected president of the Montreal Protocol for one year at Copenhagen, told newsmen today that India had recently

received a small amount of \$500,000 from the UNDP [United Nations Development Programme] for preparing research projects to implement the switchover.

Once these projects are ready, India would approach the multilateral fund which has been established under the Montreal Protocol to compensate the developing countries for the switchover.

Both private industry and government-laboratories would be entitled to assistance and could approach the environment ministry with projects.

Giving an account of what had been achieved at Copenhagen, Mr Nath said India had successfully resisted the imposition of compressed schedules as a sequel to the decision by the developed countries to phase out CFC-11 and CFC-12 by the end of 1995 instead of AD 2,000 as had been earlier agreed.

Under the compromise agreed at Copenhagen, compressed schedules would not apply to developing countries until a full review of the working of the financial mechanism, transfer of technology and availability of substitutes, is carried out in 1995.

The minister said the establishment of the financial mechanism, including a dedicated fund, for assisting the developed countries to switch over to ozone-friendly substitutes, was very heartening from the Indian viewpoint.

An interesting sidelight at the meeting was the change in the U.S. stance.

JORDAN

Yearly Water Loss 8 Billion Cubic Meters

*93WN0181B London AL-SHARQ AL-AWSAT
in Arabic 25 Nov 92 p 12*

[Report from Amman: "7 Billion Cubic Meters of Water Wasted in Jordan Annually"]

[Text] As the first rains fall on Jordan this year, the issue of wasted water has surfaced anew among those concerned with the water sector in Jordan, and especially among officials of the Ministry of Water and Irrigation.

Engineer Jamil al-Rashdan, director of water resource studies at the Ministry of Water and Irrigation, said that this year the ministry seeks to deal with the large quantities of lost water. He added that the heavy rainfall Jordan received last year was largely wasted. Wasted water in Jordan amounts to 7 billion cubic meters, or 85 percent of the rainfall. Some 875 million cubic meters flow as surface water, and 675 million cubic meters seep to subterranean reserves.

Ministry of Water and Irrigation reports indicate that it is currently possible to provide 800 million cubic meters of water and that it would be possible to provide 970 million cubic meters by the year 2000, for an increase of 170,000 cubic meters. But the 120 million cubic meter excess of supply over demand does not mean that the problem is being resolved, because per capita water consumption in Jordan is constantly on the rise. The report added that per capita consumption rose from 69 liters per day in 1985 to

75 liters per day in 1991 and is expected to climb to 80 liters per day in the year 2000.

This persistent rise in consumption means that demand will increase by 200 million cubic meters by the year 2000, and the end result will be a shortfall of 80 million cubic meters, not to mention water wasted during use, which amounts to twice per capita consumption. This in turn means that increased consumption will easily devour resources. Nevertheless, Jordan considers it primarily a problem of resources and not of consumption. Annual per capita consumption in Jordan barely amounts to 250 cubic meters compared with per capita consumption of 1,000 cubic meters in advanced countries.

Al-Rashdan said: "Our former problem in Jordan has been our limited resources and not rising consumption, but this does not mean that we do not also need to ration use."

The Jordanian Government's development plans call for constant media campaigns to induce the population to rationalize consumption and to encourage farmers to utilize modern irrigation techniques.

Water Deficit To Reach 574 Cubic Meters by 2000

93WN0181A London AL-HAYAH in Arabic
11 Dec 92 p 12

[Report from Amman: "Jordan's Per Capita Share of Water Less Than Half of World Minimum"]

[Text] Engineer Samir Qa'war, Jordan's minister of water and irrigation, said that Jordan's water budget suffers a permanent deficit that forces the government to deplete subterranean waters and to resort to other methods—such as rationing, technology, and the nonutilization of farmland—in order to secure household water needs.

Qa'war spoke at the monthly forum of the Jordanian Businessmen's Association to which senior Jordanian officials are invited to address economic conditions in the country. He said that "the water budget's shortfall amounted to about 320 million cubic meters in 1991 and estimated that the shortfall will grow to about 574 million cubic meters early in the next century.

The Minister of Water and Irrigation said that depleting nonrenewable subterranean waters is a solution fraught with such risks as diminished quality, inability to meet demand, and the threat of disrupted exploitation of those resources.

He called instead for "building more dams and digging more wells," as well as for regulating water consumption in the various sectors, such as industry, agriculture, irrigation, and household use.

Engineer Qa'war said that at 3.5 percent, the annual rate of population growth is "very high" and has been unnaturally augmented over the past two years by the return of hundreds of thousands of Jordanians from Kuwait and other Gulf states. As a result of such population growth, the per capita share of water in Jordan has dipped below the established world minimum of 100 cubic meters per individual annually.

Qa'war estimated per capita share of water in Jordan at less than 45 cubic meters "if we consider that that number was the per capita share in 1991". He added that those figures do include household water, of which 30 percent is wasted while being pumped through the distribution network, which is quite old.

The minister of water and irrigation said that the government has expended about 170 million dinars on the household water sector since 1973. Maintenance and operation of water utilities and the service of associated debt amounted in 1991 to about 39 million dinars versus gross revenues of about 18.5 million dinars. That meant that the return on a cubic meter of household water equalled approximately 47 percent of service costs.

Engineer Qa'war estimated water consumption last year at about 833 million cubic meters, of which 178 million cubic meters were for drinking water, about 42 million cubic meters for industry, and some 613 million cubic meters for irrigation and farming.

He added that Jordan is uniquely short of water resources among countries of the region even though 65 percent of Arab populations obtain water from resources across their borders with neighboring countries. Of those populations, 24 percent do not have running rivers that would guarantee them water year-round. He pointed out that many of the sister countries resort to desalination to make up for their water shortages but that desalination is an exorbitantly expensive operation that is beyond Jordan's means.

He said that Jordan depends primarily on rainwater. Eighty-five percent of rainfall is lost to evaporation and to marginal valleys, and only 5 percent of rain water goes to feed subterranean reserves.

Engineer Qa'war explained that the government has built dams to collect water but that the dams, the biggest of which is the King Talal Dam, with a capacity of about 80 million cubic meters, were unable to hold last year's rainfall. He added that a number of dams are planned for various areas of Jordan.

Britain To Provide Technical Aid for Water Projects

London AL-SHARQ AL-AWSAT in Arabic
31 Dec 92 p 5

[Report from Amman: "Britain Offers Technical Assistance for Water Security Program in Jordan"]

[Text] The British embassy in Amman said that the technical assistance plan for water projects, in which Britain assumes a major role, is important for the future water security of Jordan. Its outcome will guide water planners on the feasibility of supplying the capital city of Amman and other areas with water from the southern Sahara.

The information bulletin published by the British embassy said that according to an adviser to the two British firms assigned to study the al-Disah water basin, the al-Disah Water Basin project is representative of the technical

assistance extended to Jordan's Water Authority. A four-man team of British experts is working with Water Authority personnel to supervise the drilling of wells at a depth of 1.3 km.

The bulletin added that the authorities of Water and of Natural Resources have joined forces in order to expedite the drilling project. The deepest well has been dug by drills that are used by the Natural Resources Authority to prospect for oil and gas.

The information bulletin quoted the British expert as saying that all drilling equipment used in the project is owned by the Jordanian Government and that the British Government has supplied all of the materials and tools needed for the feasibility study. The latter are valued at 2.3 million pounds and include pipes, screens, drilling liquids, liquid additives, electronic geophysical measuring instruments, pumping test instruments, and other consumables required for the project.

It is common knowledge that the feasibility study of the project site, bounded by Ma'an, al-Mandurah, and al-Disah in the southern Sahara, will take a year to a year and a half and will involve drilling a total of 15.3 km below ground. The drilling program calls for several electronic measurements of various strata and requires drilling to those levels in order to ascertain the presence of water reservoirs under the rock formations and their quality, how they seeped down there, and the feasibility of bringing the resource up to the surface.

PAKISTAN

Antipollution Program To Cost 20 Billion Rupees

*BK1701084093 Islamabad Radio Pakistan Overseas
Service in English 0800 GMT 17 Jan 93*

[Text] A five-year program to protect the environment from pollution has been prepared with an outlay of about 20 billion rupees under the national conservation strategy. This was stated by the minister for environment, Mr. Anwar Saifullah Khan, while speaking at the one-day donors conference for this purpose in Islamabad this morning. Outlining salient features of the program, he said it is aimed at achieving a three-pronged objective, including an institutional framework, [words indistinct] awareness and a regulatory legislation with economic incentives to free the environment from deterioration. The conference with the minister for finance and economic affairs, Mr. Sartaj Aziz, in the chair is being attended by donor countries and representatives of international agencies.

Ten-Year Environment Program Planned

*BK1901103893 Islamabad Radio Pakistan Overseas
Service in English 0800 GMT 19 Jan 93*

[Text] A 10-year program with an outlay of 150 billion rupees has been formulated to protect the environment. This was stated by the federal minister for environment, Mr. Anwar Saifullah Khan, while inaugurating a seminar in Islamabad today. He said 60 percent of the expenditure on the plan would be met from official resources, while the remaining 40 percent would be shared by the private sector and foreign donor countries and agencies. The minister for environment urged the oil and gas industry to ensure proper disposal of toxic waste and chemicals.

REGIONAL AFFAIRS

Russia, Ukraine To Receive G-7 Funds To Help Run Nuclear Plants

LD2901174593 Moscow ITAR-TASS in English
1527 GMT 29 Jan 93

[By ITAR-TASS correspondent Gennadiy Kulbitskiy]

[Text] Bonn, January 29 (TASS)—The German government has planned to allocate in 1993 21 million Dm [German mark] to render international aid to Russia and Ukraine in running nuclear power plants, German Minister for the Environment, Conservation and Reactor Safety Klaus Toepfer said here today.

The money will be transferred to the newly set up International Fund for Assistance to Russia and Ukraine in Running Nuclear Power Plants. An agreement to create the fund was reached by ministers of the seven leading Western nations at Wednesday's London conference chaired by Toepfer.

At the first stage, the budget of the international fund will run into 120 million Dm, then it will reach 700 million Dm. The financial aid will be rendered for the fulfillment of specific projects to enhance nuclear power plant safety.

The minister voiced his intention to visit Moscow and Kiev on February 22. In Moscow Toepfer and his French colleague will take part in the opening of a bureau of the German Reactor Safety Society. Bureau activities will be joined by French experts.

In the words of the minister, a German-French expert group has confirmed there is no danger for the Armenian nuclear power plant reactor. At the same time, it is necessary to resume electricity supply to the plant to ensure the cooling of reactor-kept nuclear fuel, experts believe.

Turkish Envoy to Russia Views Black Sea, Other Regional Issues

MK0202100593 Moscow NEZAVISIMAYA GAZETA
in Russian 2 Feb 93 p 3

[Interview with Volkan Vural, ambassador extraordinary and plenipotentiary of the Turkish Republic to Russia, by Aydyn Mekhtiyev; date, place not given: "Cooperation Is the Guarantee of Stability"]

[Text] [Mekhtiyev] Mr. Ambassador, approximately two years ago President Turgut Ozal of Turkey put forward the initiative of forming a community of countries of the Black Sea region. What stage has the plan to set up this regional organization reached today?

[Vural] As you know, a session of foreign ministries of countries of the Black Sea region was held in the Turkish city of Antalya recently. At this meeting the possibility of setting up a secretariat as a permanent organ of the community was discussed. Experts from the Black Sea Community member countries will meet in Istanbul in February to discuss various aspects of economic cooperation. Turkey has put forward an initiative on setting up a council of parliaments of the community countries. We expect representatives of the Russian Supreme Soviet to

come to Turkey soon to discuss this question. Some time later it is proposed that the speakers of the Black Sea countries' parliaments will hold a session in Turkey, at which a joint statement is expected to be adopted.

[Mekhtiyev] It was reported in the press that during a visit to Kiev last year by Turkish parliament speaker Khyusamettin Dzhindoruk [name as transliterated], disagreements emerged between Turkey and Ukraine on the question of the role of the Black Sea Community which is being set up...

[Vural] It is true that there is as yet no unified stance among the region's countries on the question of how close the political cooperation within the framework of this organization should be. But that is no reason to talk about disagreements.

[Mekhtiyev] In October of last year the leaders of Turkey and the five Turkic-speaking countries of the former USSR signed a joint declaration in Ankara. Some observers assessed this event as a great success for Turkey in the struggle with Iran for influence in the region. Do you agree with that view?

[Vural] The problem of rivalry between Turkey and Iran has been created artificially. Turkey does not interfere in the internal affairs of the Muslim countries of the former USSR. Each of them is entitled to choose its preferred model for its state system. But Turkey could certainly serve as a pattern for them: It is the only country in the Islamic world which unites democratic principles with Islam. It is hardly possible to build a truly democratic state under the laws of the Shari'at. And the former USSR republics, including Tajikistan, realize that.

[Mekhtiyev] At the Ankara summit it emerged that Turkish President Ozal is in favor of the speedy formation of a "common market" of Turkic-speaking countries, whereas premier Demirel is an advocate of gradual integration...

[Vural] True. What Mr. Ozal is proposing is a long-term aim which could be achieved in 10-15 years' time. The difficult transitional conditions which the Muslim countries of the former USSR are experiencing today do not allow us to hope for close integration on the model of the European Community. So Mr. Demirel's view very much reflects that fact of life.

[Mekhtiyev] Why, in your view, did Kazakhstan's leader Nazarbayev come out against the signing of a protocol providing for the construction of a main fuel pipeline for exporting oil from Kazakhstan to Europe via Turkish territory?

[Vural] The fact is that at the Ankara meeting Kazakhstan proposed an alternative plan whereby the pipeline would go via Russian territory. In principle this plan is also acceptable to Turkey, because its implementation will accelerate the fulfillment of the programs of the Black Sea Economic Community.

[Mekhtiyev] How do you assess the recent Tashkent summit meeting of Central Asian states?

[Vural] We believe the positive role of the Tashkent meeting is beyond doubt. This was in fact confirmed by the Minsk CIS meeting, at which the leaders of the Turkic-speaking republics of the former USSR adhered to a joint

stance. This very encouraging sign is evidence that the Muslim republics have great potential for cooperation.

[Mekhtiyev] Mr. Ambassador, last year Russia and Turkey marked a historic date—the quincentennial of bilateral relations. How do you assess the future of Russian-Turkish cooperation?

[Vural] We pin great hopes on the forthcoming official visit to Ankara by Russian President Mr. Yeltsin. According to our information, the visit will take place in the first half of 1993. During the visit a framework treaty on the fundamentals of interstate relations, a joint declaration on cooperation, and important documents in the economic sphere will be signed. Drafts for some of these agreements are ready, others are still at the review stage. We hope that the Russian president's visit to Ankara will raise trade and economic relations to new heights, and that the volume of trade turnover between the two countries will be boosted from \$2 billion a year to at least \$4-5 billion.

[Mekhtiyev] Today Russia, having embarked on the path of radical economic reform, has come up against enormous difficulties. Could Russia, in your view, make use of the Turkish experience of the transition to a market economy?

[Vural] I am sure of it. Last year I had a talk with Harvard University Professor Jeffrey Sachs, economic adviser to the Russian Government. Discussing the question of economic reforms in Russia, we came to the conclusion that Russia today is facing all the same problems that Turkey had in the early eighties: inflation, privatization, unemployment. Even now Turkey has not yet overcome all the negative consequences of the transitional period: The inflation rate in Turkey today is still high. Nonetheless we believe that help from the Turkish Government could be of more tangible benefit to Russia than help from the West.

[Mekhtiyev] The Turkic-speaking republics within Russia have recently shown a desire to extend ties with Turkey.

[Vural] We respect the Russian Federation's territorial integrity. At the same time we maintain cultural and economic relations with Tatarstan, Bashkortostan, and other republics within Russia which have a cultural and ethnic affinity with Turkey. We believe the development of these ties can only promote stability in Russia. Especially since all our contacts with the authorities of the republics within Russia take place with the knowledge of the Russian Government.

[Mekhtiyev] Mr. Ambassador, there are many "hot spots" on the territory of the former USSR today. In particular, the Armenian-Azerbaijani conflict is being played out in close proximity to the Turkish border. What do you see as the solution to this crisis?

[Vural] The realities that exist in the world must be taken into account. The principle of respect for Azerbaijan's territorial integrity must be taken as a basis. That is why we consider Azerbaijan's demand for the withdrawal of Armenian troops from the Azerbaijani region of Lachin to be justified. Only then can peace be achieved in the region. We have told Armenia repeatedly that the establishment of diplomatic relations between Turkey and Armenia will only become possible if Armenia commits itself to a

peaceful settlement of this problem. A meeting of representatives of five CSCE member countries—Russia, the United States, Turkey, Armenia, and Azerbaijan—is to take place in Rome in February, at which it is proposed to formulate a mechanism for a cease-fire in the region.

[Mekhtiyev] The Armenian Government stated recently that commissioning of the Armenian nuclear power station is possible in the current complex energy situation...

[Vural] Turkish reaction to this statement was one of profound concern. Starting up a nuclear power station in an earthquake danger zone could pose a real threat to the safety of the entire region. Turkish Premier Mr. Demirel and President Ter-Petrosyan had a telephone conversation on this matter a few days ago. As for Armenia's request for the Turkish Government to supply the republic with electricity, at present there are technical obstacles to transmitting electricity to Armenia across Turkish territory, but we are hoping to resolve them in the very near future. We responded positively to Armenia's request for deliveries of grain to the republic, playing the role of an intermediary in this instance. The European Community will provide us with grain deliveries in the same quantity that we have exported grain to Armenia.

[Mekhtiyev] What is the Turkish Government's position on other regional conflicts?

[Vural] We cannot be indifferent to the war taking place in Bosnia and Hercegovina. We resolutely condemn the mass killing of Bosnian Muslims as a result of Serbia's naked aggression. There is a real danger that this conflict will spill over into neighboring Kosovo and Macedonia, and this could lead to a general Balkan war. Finally, the continuation of the Bosnian war could lead to a large-scale war between Christians and Muslims. To prevent this we are demanding that the world community tighten sanctions against Serbia. The Islamic world is currently concerned that the Western countries are displaying concern for the establishment of peace in Somalia and are trying to stop Iraq's aggressive actions but are reluctant to defend the defenseless Muslim population of Bosnia against the SDerb nationalists.

[Mekhtiyev] How do you assess the situation in the Persian Gulf? Is it possible to peacefully resolve the conflict between Iraq and the world community?

[Vural] To be frank, we are not sure that Iraq's present leadership can find a common language with the world community. Nevertheless there is still hope that Saddam Husayn will abandon his aggressive intentions against neighboring states.

[Mekhtiyev] What is the Turkish Government's attitude to the recently submitted plan to increase the number of permanent members of the UN Security Council from five to seven?

[Vural] This question is of great importance for us. It cannot be denied that the current structure of the UN Security Council is more of a reflection of the realities of the postwar shape of the world, and today there is a need to reorganize the Security Council. We are not opposed to Germany and Japan being included among the permanent members of the UN Security Council. But it must not be forgotten that there are also the interests of the Turkic

world. And Turkish-speaking countries are fully entitled to be permanent members of the UN Security Council.

[Mekhtiyev] Might Turkey become a permanent member of the Security Council?

[Vural] This is undoubtedly under discussion. We would not want the Security Council to be a kind of Western countries' club. There are now more than 20 million Turks in the world, and this fact cannot be ignored. So the Turkish Government could put it to the world community that some country representing the Turkish-speaking countries or the Islamic world as a whole could be included among the permanent members of the UN Security Council in addition to Germany and Japan.

RUSSIA

Intelligence Service Releases Report on Weapons of Mass Destruction

OW2801121193 Moscow INTERFAX in English
1146 GMT 28 Jan 93

[Following item transmitted via KYODO]

[Text] Sixteen countries of Asia, Africa and Latin America have fallen in the "black list" of the Russian Intelligence Service which thinks that they possess or are "on the road" to possessing this or that type of weapon of mass destruction. The evidence for this assessment will be presented in the first open report by the Intelligence Service: "The New Challenge After the 'Cold War': The Proliferation of Weapons of Mass Destruction." On Thursday [28 January] it was presented at a press conference in Morsk by the director of the Service, Yevgeniy Primakov.

The authors of the report note that the 16 countries they have chosen are by no means all who have weapons of mass destruction or are trying to acquire them, but are the "main characters". In alphabetical order they are:

Algeria (the resources for the creation of weapons of mass destruction are insignificant)

Argentina (it has the potential but no reliable data that the country is carrying out a serious program of a military character)

Brazil (has the resources, there is evidence of the existence of a highly developed research program but there are no reports on the possession of nuclear weapons)

Egypt (there is no evidence of the possession of nuclear weapons, it is not considered that it can possess them in the foreseeable future)

India ("may be moved to the list of countries who unofficially have nuclear weapons", has chemical weapons, "not less than five military centers are related to the military-biological sphere")

Iraq (carried out the processing of nuclear weapons, but by the beginning of "Desert Storm 1" [as received] she had not acquired the weapons, now it is undertaking efforts to revive missile enterprises which produce means of making weapons of mass destruction).

Iran (does not possess nuclear weapons but is carrying out a program of research, possesses chemical weapons "at the

very least of two types", has military related biological program but has no offensive biological weapons)

Israel ("unofficially has nuclear weapons", and a reserve of chemical weapons locally produced, "there is no "direct evidence" of the possession of biological weapons)

North Korea (does not possess nuclear weapons though it has an "advanced" program, has program on chemical and biological weapons)

Libya (no evidence of the possession of nuclear weapons, it cannot produce nuclear weapons "in the foreseeable future", has 70- 80 tons of chemical weapons, at the starting level of research in the area of biological weapons)

Pakistan ("has nuclear potential of military nature", no evidence of the possession of chemical weapons, but work is proceeding, accumulated a large reserve of pesticides)

Syria (has limited resources for the creation or acquisition of weapons of mass destruction in full volume, has no nuclear weapons, but has potential for chemical weapons, no biological weapons or programs directed toward it)

Taiwan (is capable of creating components of weapons of mass destruction and the means for acquiring them but it does not possess them)

Chile (has no nuclear weapons, has a small reserve of chemical weapons)

South Africa (may possess weapons of mass destruction, but it has no nuclear weapons, no evidence that the country has chemical or biological weapons)

South Korea (probably does not have its own weapons of mass destruction, though the industrial potential is great)

In the preface to the report, Primakov notes that the proliferation of weapons of mass destruction presents a threat to the general stability and creates new regional conflicts of a more dangerous character. Primakov stressed that the situation where states possessing nuclear, chemical or biological weapons may emerge in the perimeters of the Russian border "is unacceptable."

According to experts of the Intelligence Service, in a number of zones of high risk—Middle East, Persian Gulf, South and North Eastern Asia—on the map will be placed the very survival of the state. [sentence as received] They do not exclude, for example, the possibility that in the case of a transition into a critical level of conflict between India and Pakistan, the "prize" for the country that emerges on top will be the disintegration and practical elimination of the survival of the other country.

Of special danger, in the opinion of the authors of the report, is the ecological threat related to the proliferation of weapons of mass destruction. Already today, they write, on the territory of the former USSR districts where the level of radiation makes them unfit for life amounts to 4 million square kilometers, and in the U.S., 15 thousand zones of dangerous chemical and radioactive pollution have been declared. The experts are convinced that the currently existing mechanisms of international control are not adequately effective and a complete complex of global measures in order to stop the proliferation of weapons of mass destruction is necessary.

Danilov-Danilyan Seeks 'Easy Terms' From Montreal Protocol Countries

*LD1501222693 Moscow ITAR-TASS in English
2049 GMT 15 Jan 93*

[By ITAR-TASS correspondent Anna Bakina]

[Text] Moscow, January 15 (TASS)—“Russia has to turn to foreign participants in the Montreal protocol on elimination of ozone-depleting substances signed by the former Soviet Union in 1987 with a request for easy-terms for its fulfillment of obligations,” Russian Minister of Environment and Natural Resources Viktor Danilov-Danilyan told a news conference here today.

Russia is now producing ten percent of ozone-depleting substances. “However, due to insufficient financing, we not only had to ask for benefits, but also cannot take on ourselves new obligations, as it was done by the rest participants in the protocol,” said the minister.

Ministry specialists see a way out of the situation in the creation of experimental production bases on output of ozone-safe substances, spending on which has been included in a state program to enjoy 27 billion roubles.

However, the program is a stillborn as the financing has not begun.

Danilov-Danilyan Previews 'Environmental Security' Program

*93WN0267A Moscow NEZAVISIMAYA GAZETA
in Russian 30 Jan 93 p 1*

[Article by Dmitry Frolov, under the “Russia” heading: “The Ecology: A Third Way? The Immensity of the Plans, Laws, and Problems”]

[Text] Although the news conference of Minister of Environment and Natural Resources of the Russian Federation Viktor Danilov-Danilyan was rather predictable in its key, nonetheless, it did not escape the attention of the Russian mass media, and this in itself is remarkable. The fact that the degree of civilization, the well-being of the country, and the level of the ecological safety of its environment are interrelated is an absolutely obvious fact. And therefore, it is not surprising that it is precisely the rich, developed countries that pay immeasurably more attention to the problems of ecology than do their less prosperous neighbors, although the latter are burdened by many more ecological troubles. However, there are exceptions to all rules, and it is not without reason that at last year's world ecological summit in Rio [as published], our country insisted on a special status, not claiming the role of developed, but also categorically not agreeing to be counted among the developing countries. It seems that in an ecological sense, we really are taking a certain third path, where the scale of danger does not permit not only the “greens” to close their eyes to this, but also those who would be happy to do this. But, on the other hand, the very same scale and, speaking more exactly, the scope of the former and current nature-destroying measures are practically paralyzing efforts somehow to correct the situation. While state reports on the condition of the environment and the health of the population are being read as a classic model of anti-utopia, and the country is going through a

brutal economic slump, one should not hope, of course, for a quick and effective resolution of ecological problems that exist in one form or another in all regions. Nonetheless, the attempt to form a national ecological policy and to develop a complex of measures of a legal, economic, and organizational nature, although not a guarantee in any case, are still a certain token of positive progress. In any case, apparently, it is precisely this logic that guided the authors of the new Russian legislative acts concerning environmental protection. The first was the Law on Environmental Protection of 1991 and the Law on Mineral Resources, and also certain paragraphs of the Law on Taxation and of the Federal Treaty, and a number of provisions of other documents. Now, legislation has been especially activated, and literally the other day the Supreme Soviet of the Russian Federation adopted the Principles of Forestry Legislation, which uses the approach of a similar document concerning water resources, and laws are being examined on radiation safety, nuclear energy, and nuclear wastes, and another entire package is waiting its turn.

However, according to the words of Viktor Danilov-Danilyan, the minister of ecology, as before, we are living in a situation of juridical vagueness. At one time, the minister had an opportunity to become graphically convinced that the number of laws can prove to be in inverse proportion to their effectiveness. Thus, four years ago, under the leadership of Danilov-Danilyan in the Academy of the National Economy, work was conducted on the selection of all laws and sublegal acts concerning environmental protection that had been adopted since 1917. Their enumeration alone amounted to 270 typewritten pages, but in fact the ecological situation by that time was practically uncontrollable.

But, now, in the words of the minister, a definite positive vector exists, and it must be supposed that the federal comprehensive program “The Ecological Safety of Russia,” whose formation will be completed in the next few days, will emphasize it, among other things. This time, its creators went against custom, starting not with a statement of the general task and the selection of executors; on the contrary, they preferred the entirely logical course of turning first to the consumers—the territorial environmental protection organs—subdivisions of the ministry and other departments. A scheme was established on the basis of their statements by which executors began to be selected. Their applications will be accepted for about another week, but it has already been possible now to calculate that the program should cost approximately 4 billion rubles [R] in December 1992 prices. In comparison with the federal budget deficit, which is calculated in the trillions, this sum does not look colossal; therefore, there is hope that it will be allocated.

Besides the purely applied aspects, the program also contains a fundamental part whose task is an evaluation of the development of the situation and identification of lines of greatest risk.

According to statements of specialists, one of the most probable of these could become the situation that is emerging with the detoxication and utilization of wastes, three-quarters of which are toxic and that are already threatening irreversible pathogenic changes for the population and a degradation of the environment. Today in

Russia, there is not one test range for utilization and detoxication that meets modern requirements and, however unpleasant this sounds, we are threatened by the fate of a colony of yeast that dies from the products of its own vital activity. Ecology, it is true, prefers another analogy, talking about a second Chernobyl, which, however, does not at all mean that our fate will be any different.

Yablokov on Russia's Ecological Priorities for 1993

*LD2801144593 Moscow ITAR-TASS in English
1419 GMT 28 Jan 93*

[By ITAR-TASS correspondent Nikolay Krupenik]

[Text] St. Petersburg, January 28 (TASS)—Presidential Counsellor for Ecology and Health Protection Aleksey Yablokov believes the rehabilitation of territories, subjected to radioactive contamination at different times, should be among the priority directions of Russia's ecological policy. He addressed today the first All-Russia conference of chairmen of standing ecology commissions from the people's councils of 22 members of the Russian Federation.

"A radioactive threat is posed to the health of the Russian population," Yablokov noted, "not only by so-called patch pollutions, discovered after the Chernobyl disaster in several areas, including Leningrad region, but also by traces of old technological accidents at classified enterprises of the southern Urals. The radioactive danger did not spare the population of Altay territory, which is directly adjacent to the Semipalatinsk testing ground. Tomsk-7 and Krasnoyarsk-26, as well as the waters of the Kara and Barents Seas, where nuclear reactors from decommissioned submarines have been dumped for many long years, should be given close attention to ensure the population's health. An individual approach to each region is needed, as well as a specially drawn up programme for the rehabilitation of contaminated areas," he noted.

Yablokov expressed his profound conviction that there was an alternative to nuclear energetics in spite of the prevailing view. "Experts believe that worn-out generating units of nuclear power plants could be replaced without any losses for the national economy by gas-turbine aircraft engines. The modernisation of nuclear power plants and the replacement of obsolete nuclear generating units with new ones will take about 15 years and will be very costly. However, before choosing this or that version of the nuclear power plants' development, the Supreme Soviet should adopt without delay a law on nuclear energetics, as well as a law on the disposal of nuclear wastes," Yablokov stated.

Among the priority ecology problems, requiring urgent solution, he pinpointed the problem of tap water. According to Yablokov, three quarters of Russia's water sources are not being used as such for different reasons. One third of the old underground water reservoirs have become unfit for drinking. Potable and industrial waters often differ very little from each other.

Former Soviet Expert Details Work on Germ Warfare Program

*LD2101165693 London PRESS ASSOCIATION
in English 1610 GMT 21 Jan 93*

[By PRESS ASSOCIATION DEFENSE Correspondent Charles Miller]

[Text] The former Soviet Union broke international treaties by developing horrific germ weapons that could wipe out humanity, according to claims tonight by a recent defector to Britain. Dr Vladimir Pasechnik, a former Soviet expert in biology and genetic engineering, told BBC2's Newsnight of his "horror" at having to develop a genetically manipulated strain of plague which was immune to Western antibiotics. He said his "disgust" with this work persuaded him to defect while on a business trip to Britain.

And, on the same programme, Foreign Office Minister Douglas Hogg warned that work on a biological weapons programme could be continuing in the former Soviet Union despite a ban by Russian President Boris Yeltsin. Mr Hogg describes Dr Pasechnik's arrival in Britain and the information he has as "very significant". The scientist worked in St Petersburg, then Leningrad, from 1980 as head of one of the centres of covert biological weapons research - whose work was in direct breach of a 1972 biological weapons treaty. Plague bacteria were cultivated in flasks containing an antibiotic and the process was continually repeated to produce a strain resistant to drugs in the West.

The new bacteria were to be left vulnerable to antibiotics known only to the Russians which could be used to vaccinate their own troops. The Russians believed this "super-plague" could be used against cities, not necessarily in all-out war, he claimed. Dr Pasechnik described how it could kill half the population of a town of 100,000 inhabitants in a short period of time. He also believes it could be used by terrorists. Former Soviet leader Mikhail Gorbachev told Western leaders he knew nothing about the development of biological weapons but officials at the Russian foreign ministry are quoted as saying he lied. And despite a ruling by President Yeltsin that all research should be stopped there is evidence that his authority is being flouted. Mr Hogg said: "We have some information from some sources which suggests that there has not been a full compliance with President Yeltsin's decree in policy. "Now that could very well happen without President Yeltsin's knowledge. It's very difficult to make a judgement, but we would wish to go on pressing the Russians on this point," he added.

Mirzayanov Interviewed on Chemical Weapons Revelations

*MK2301144493 Moscow KURANTY in Russian
23 Jan 93 p 5*

[Interview with Vil Mirzayanov by Konstantin Katanyan; date and place not given: "They Wanted To Make Me the Scapegoat"]

[Text] [Katanyan] *After the well-known piece in MOSKOVSKIYE NOVOSTI you found yourself behind bars. But a*

year before, after your first article in KURANTY, Mirzayanov was for some reason ignored by the competent agencies. So why was such careless negligence displayed at the time?

[Mirzayanov] I think this was linked with the fact that at that time the top leadership of our military-chemical complex, which was well versed in the rules of the game of misleading public opinion, resorted to a different weapon—silence. And although the article in KURANTY virtually coincided with the MOSKOVSKIYE NOVOSTI article entitled "Poisoned Policy," it did not spark a reaction among either the Russian or the foreign public.

But there was a reaction to the item nevertheless—at that very time I was fired from the institute where I had been working for the previous few years.

[Katanyan] As is known, soon after the MOSKOVSKIYE NOVOSTI item the American press carried information which was even more secret than what you had been talking about. So why are attempts made to place the entire blame for divulging state secrets on Mirzayanov? Do you not suspect an attempt thereby to conceal another source of the information that gets to the West?

[Mirzayanov] I think you are right. A month after the MOSKOVSKIYE NOVOSTI article the BALTIMORE SUN carried another article about the situation in terms of chemical weapons in Russia which cited what was indeed secret information. This testifies that foreign correspondents have independent channels of information. So my arrest had the objective not only of intimidating me and other experts in the field of chemical weapons but also of covering someone's tracks and diverting suspicion from the real sources of secret information and also from those in the West with an interest in obtaining this secret information.

[Katanyan] So why is an attempt being made to keep these people in the shadows? Who are they—well-known scientists or top officials in state structures?

[Mirzayanov] I believe that the people selling the country's secrets do not include real scientists or ordinary engineers. The top leadership is another matter; it is playing a game of its own. And I fear that the top leadership of the U.S. military-chemical complex is also involved in this game.

The KGB, the leadership of the Ministry of the Chemical Industry, and the generals [generalitet] all have a material interest in providing themselves with a gravy train cloaked in secrecy. It was recently revealed that Petrunin, director of the State Scientific Research Institute of Organic Chemistry and Technology, and the leadership of the Ministry of the Chemical Industry received a Lenin Prize for developing a binary weapon based not on agent Novoye [Novoye veshchestvo], as stated in the official sources, but on agent Cheboksary [Cheboksarskoye veshchestvo]. Agent Novoye was held in reserve to be used to get another prize. And only unforeseen circumstances prevented them getting it.

The same thing is happening now. Since we are disarming, destroying old weapons, and saving the world from them, why should we not publish information about our binary weapons of one kind or another. But this is not happening. So why is the military-chemical complex leadership

keeping these secrets? It is clear that this is being done not in Russia's interests but in the interests of high-ranking officials capable of trading in the information they possess.

[Katanyan] Do you have information on who can transfer secret information to the West?

[Mirzayanov] Of course. Abroad there are three of our experts who are much better informed in the field of chemical weapons than I am. They know everything. They are now permanently resident in the United States and have a very good life there, to the best of my knowledge.

Of course they have not written about what they know in the newspapers or trumpeted about the danger of chemical weapons, although they know that our stockpiles are as high as 60,000-70,000 tonnes, by no means the 40,000 tonnes cited by General Kuntsevich, an academician and chairman of the Convention Committee under the Russian president.

[Katanyan] So how did the state security organs allow these people to go abroad?

[Mirzayanov] Either they were sent specially—meaning that the KGB sent them there for the purpose of spreading disinformation—or a blind eye was turned to their departure. But that means that somebody was benefiting. I know for a fact that many of my scientist colleagues would like to go to the United States and that people linked to secret work are simply not let out of the country. So KGB authorization was essential.

[Katanyan] The sanction used against you by the KGB in the shape of the Russian Ministry of Security was arrest. Did they not attempt to pressure you to admit your guilt?

[Mirzayanov] Everything boiled down to precisely that. During interrogation, when I was accused of giving away state secrets and damaging the country's defense capability, they very much wanted to have a record of my saying with my own lips that I had deliberately given away all this information obtained in connection with my professional post at the research institute.

At the time it might have been possible to pretend that nobody had given away any information to anyone. And then they would have managed to make me the scapegoat. But I did not give away any secrets in those articles, I only warned about the danger of continuing to produce new binary substances leading to the violation of the agreement with the United States on halting work in this field.

[Katanyan] Did they not attempt to apply physical or psychological measures against you?

[Mirzayanov] I was not allowed a lawyer, and the Chekists tried for a long time to impose a defense attorney from among their agents on me. Here they resorted to overt lies, claiming that my wife had agreed to the services of attorney Vasilyev, whom I rejected.

[Katanyan] Fortunately the court released you from custody. Do you think that if you had stayed behind bars you could have withstood the psychological pressure of prison?

[Mirzayanov] My being released from custody had not figured in the investigators' plans. They had not reckoned that I would be at liberty and would be able to legally

divulge everything I knew. A lawyer may make a written commitment of nondivulgence, but I didn't make such a commitment.

But if I had been kept in prison it would have been very easy to fabricate a case. The atmosphere of total isolation and being cut off from the outside world drags a person down.

[Katanyan] We know well from history what dirty methods were used by the competent organs to get suspects to admit their guilt. Often criminals or informers would be planted in a cell with them. Did anything like that happen to you?

[Mirzayanov] For three days I was on my own in a cell for three. Then I refused to eat, sustaining my hunger strike for two days before being transferred to another cell.

There were two people in this other cell with me: One was accused of currency smuggling, the other of killing a KGB officer. It is hard for me to judge whether they were plants or not. In this field the KGB is unsurpassed by any other agency. But I don't want to besmirch my cell mates, especially since they gave me the idea of filing a complaint of unlawful arrest, after which the court freed me.

[Katanyan] The wave of press interest in your case has subsided somewhat now. Only PRAVDA continues with its counterpropaganda in an attempt to prove that you are guilty of at least slander.

[Mirzayanov] For me the KGB and PRAVDA are linked together in a single and indivisible whole. Only after the investigating bodies admit that they made a mistake and the case is closed will the KGB'S obedient organ PRAVDA stop its brainwashing of readers aimed at misleading the public.

[Katanyan] Nevertheless I want to go back to the article in PRAVDA on 9 January in which State Scientific Research Institute of Organic Chemistry and Technology Director Petrunin, citing your official reports from 1986 and subsequent years, claimed that a control analysis of an air sample above the enterprise site showed no special product there. Did you really sign such reports?

[Mirzayanov] There is formal system of so-called emission monitoring. All plants have such a system. We know that they discharge thousands of tonnes of waste into the atmosphere, but laboratory analysis shows the reverse. And this goes on until they are caught red-handed by monitoring agencies with a real interest in protecting the environment.

The enterprises' own monitoring services, however, carry out analyses without having specialist equipment. For example, my department was called on to monitor leaks into the atmosphere of the New agent; the old ones did not interest us. Resistance to foreign technical intelligence consisted of preventing leaks of new information, known as "know-how."

At the same time an entire engineering department—the gas decontamination department—was loading reactors with kilograms of a substance to be destroyed. And since the institute's laboratories were not provided with filters to prevent toxins being discharged into the atmosphere, Moscow's air was being constantly polluted.

The point isn't that we are fools or criminals. No. It's just that the top military-chemical leadership skimmed on ecology. And without filters, any handling of toxins leads to a leak.

[Katanyan] So the institute's staffers were also receiving a dose of toxins?

[Mirzayanov] Of course. Only an ignorant KGB agent could imagine that the numerous poisonings that occurred were the result of working with a sealed ampoule, as described in PRAVDA. I myself was poisoned. Many others were poisoned.

[Katanyan] And you kept quiet about it?

[Mirzayanov] That is our tragedy. Because if you got poisoned, it was deemed to be either an accident or your own fault.

The victim was always to blame. That was our custom. But he was not the only one to be punished, they also demoted the chief of the subdivision responsible for the safety of operations. We were in the habit of calling a doctor only if someone was dying or suffered a serious injury.

I would be happy to invite the author of the PRAVDA article, who is trying to reassure the public, to come and do a tour of duty in our laboratory. I do not think he could stand the work, psychologically. Imagine you have to take a glass ampoule containing a military toxin, make an incision into it with a molybdenum or wolfram knife, break it open, and pour the contents into another ampoule or phial...

[Katanyan] Without a gas mask?

[Mirzayanov] You just can't do it in a gas mask. You are wearing gloves and you are working under a hood, of course. But the knowledge that you are holding in your hands not only your own death, but that of many others is oppressive even for the calmest people. Many people simply can't work with these substances.

[Katanyan] As I understand it, the title of the article, "Let's Wait a Bit Longer for the Destruction of Moscow," does not reflect the real state of affairs.

[Mirzayanov] It is not a question of waiting. Discharges must be stopped completely, so as to rule out that threat.

[Katanyan] So this threat is not ruled out today. Do you know of specific cases of accidents as a result of which not only the institute's staffers, but also inhabitants of the capital could have been poisoned?

[Mirzayanov] Yes. In February 1980, for instance, there was a fire in the laboratory's main block. Professor Georgiy Ivanovich Drozd and his colleagues were doing experiments. They put five 100-gram ampoules in a Kepler incubator. In order to speed up the experiment and to be able to report on the results in good time, they deliberately left the incubator switched on overnight. During the night there was a surge in tension and the apparatus caught fire. A fire started, and was noticed by people crossing the bridge on the streetcar. Our own fire crew was asleep, as usual. The firefighters arrived in response to an "01" call, but at first they would not let them into the compound. But the firefighters swept aside the guards, reached the site of the blaze, and started

putting the fire out with water. The water went all over them and they were enveloped in smoke.

They put the fire out and left. And no one knows what has become of them today. If they are alive, I'm very pleased. But the smoke spread over Moscow too. There was approximately 400 grams of the substance in the incubator. Not a single gram was found subsequently. Yet just one gram is enough to kill more than 100 people. Where did the smoke settle? Nobody inquired.

And we had fires no more and no less often than other chemical institutes.

[Katanyan] There are plenty of these institutes in Moscow...

[Mirzayanov] And each with its leaks. But there are also very extensive leaks. For instance, after an experiment they wash the equipment with water from the mains. And where does it go? Into the sewage system, that is, into the ground.

During the war, at our plant there were tons of mustard gas which were not even buried, just poured into a hole. That went into the ground too. That is why Petrunin is denying the existence of artesian wells.

Ask any worker—they really don't know about these wells. But I have a piece of paper written by the chief of the Health Ministry's Third Administration. It says that the artesian wells on the territory of the State Research Institute of Organic Chemistry and Technology have been plugged.

[Katanyan] Which means they exist?

[Mirzayanov] Plugged means closed from above. How can you close something that does not exist? I found these wells to be polluted. The entire territory is contaminated, and substances are certainly filtering through the soil and getting into the water which you and I use.

The director could take the opportunity to obtain additional funds and decontaminate the territory. But he is concealing glaring facts. Why, one wonders?

[Katanyan] Why indeed?

[Mirzayanov] It is a continuation of a policy made by unclean hands. A poisoned policy.

In January A. Kozyrev signed the convention banning chemical weapons in Paris. But the new military toxin which had been undergoing tests at Russian testing grounds for 15 years did not go on the list of prohibited substances. Since that substance is not in the convention, we can produce and even sell it.

Another point. On 16 September B. Yeltsin signed a decree giving a list of chemical goods and semifinished products for the synthesis of chemical agents whose export from Russia without license is prohibited. The list even includes a component of the American VX binary agent which Russia has never produced. But the components of agent Cheboksary are not on the list, the new agent and the semifinished products for its manufacture are not on the list. Hence the conclusion—they can be exported and sold.

One last thing, which I have not told anyone before. I have it on reliable authority that all the technical and technological documentation of our toxin production plants,

beginning in 1985, was completely reworked for submission to the bodies responsible for verification of compliance with the Geneva Convention. Naturally, it was falsified. Or else why rework it? This act was planned under the totalitarian regime, prepared under Gorbachev, and carried out under the democrats, under the Yeltsin regime. Does this not explain the repressive actions against me?

People "at the top" realize that I am a skilled chemist, that I can speak out loud about this terrible thing, and that I am not afraid just because a secret provision on state secrecy will be used against me, a provision which they do not want to tell me about even now. This provision was deemed unlawful by the USSR Constitutional Oversight Committee, but now it is being applied again.

[Katanyan] What are you planning to do?

[Mirzayanov] I intend to send an open letter to the heads of state of Western countries: President Clinton, President Mitterrand, Chancellor Kohl, and Prime Minister Major. I want to warn them that in Russia, despite the appearance of disarmament and democratization, people are persecuted for publicizing the dangerous intentions of the military-chemical complex. Intentionally or otherwise, President Yeltsin is promoting this. I accuse him of negligence, and I am prepared to describe his actions as a crime, unless the dangerous experiments with military toxins are stopped immediately.

Ministry Sees No Evidence of Major Trafficking in Radioactive Materials

OW2701205593 Moscow INTERFAX in English
2006 GMT 27 Jan 93

[Following item transmitted via KYODO]

[Text] The Russian Security Ministry has no evidence of major leakage of radioactive materials from the country, head of the ministry's public relations department Andrey Chernyenko said at a briefing in Moscow on Wednesday [28 January]. He spoke of only one incident in which eleven people were arrested on charges of attempting to ship such materials abroad.

Chernyenko also spoke of the huge damage done to the country's farming sector following fertilizer exports by about 40 companies on licences issued by the foreign trade ministry. He thinks the sector is being left to bleed for two years, and puts damages at least at about one billion dollars.

The ministry official had pointed to attempts by whom he described as some western forces to wreck Russia's security services. He spoke of about ten foundations being involved, which have branches in Russia coordinated by intelligence officers from other countries.

Chernyenko said, referring to available evidence, that some foreign intelligence services had launched a spy network in neighbouring countries, including the newly-independent republics of the former Soviet Union.

He also informed that a Russian security officer of "a fairly high rank" had been exposed on charges of contacting foreign intelligence services this year.

Chernyenko put last year's number of people detained on charges of violating CIS border controls still enforced by Russian borderguards at about 10,000. He said border troops were involved in about 60 major clashes. As many as 98 security officers were killed last year.

The security ministry employs a staff of 135,000, as compared to more than a million employed by the interior ministry. As many as 5,000 officers quit the service last year, but only 2,500 new ones were employed.

German Secret Service Reports Detail Russian Nuclear Disasters

*LD0102092993 Hamburg DPA in German
0429 GMT 1 Feb 93*

[Text] Hamburg (DPA)—The federal government holds alarming secret service reports on nuclear radiation on a hitherto unknown scale in large areas of Russia. The secret service coordinator at the Federal Chancellery, Minister of State Bernd Schmidbauer, told BILD newspaper (Monday's edition) that "the environmental damage is so enormous that we cannot imagine its true proportions."

Schmidbauer said that at the end of the fifties there had been several catastrophic accidents in nuclear arms production at the Mayak plutonium factory in the Urals, and also chemical reactions which caused nuclear waste containers stored above ground to burst. "Tens of thousands of people were evacuated, and many died from the effects of radiation. The area around the towns of Chelyabinsk, Kurgan and Sverdlovsk was affected by nuclear radiation," Schmidbauer said.

According to the secret service reports, thousands of containers of radioactive nuclear waste are disintegrating in the Siberian Sea—in the Kara Sea and the Novaya Deep, among other areas. "At least five reactors" have been sunk in Tekheniya Bay, according to Schmidbauer.

According to Soviet experts, the damage from radiation in the Urals alone is 20 times higher than after the Chernobyl disaster.

French Firm Signals Interest in Underground AES

*93WN0259A Moscow KOMMERSANT-DAILY
in Russian 14 Jan 93 p 7*

[Article by Anna Shcherbakova: "Franco-Russian AES Project: French Firm Confirms Participation in St. Petersburg Underground AES Project"]

[Text] On January 13, a delegation of representatives from the French firm SGN, led by its vice president and commercial director, Anri de la Bassetiert, departed from St. Petersburg. SGN specialists are currently researching the possibility of cooperating with Russian organizations in implementing a project for erecting an underground nuclear energy plant in St. Petersburg (see KD, December 18 and January 12). In the course of their visit, the French side confirmed its intention to participate in this project. Besides this, an agreement was reached between the firm and the St. Petersburg administration on cooperation in projects for burying nuclear wastes and eliminating areas of radioactive contamination in the city.

As KD announced earlier, a consortium of Russian production, design and scientific research organizations that had formerly worked mainly on Navy projects proposed to the St. Petersburg administration and oblast a project that would supply the city with energy based on 12 underground nuclear plants with a capacity of 600 megawatts each. Scientific leadership for the project is provided by the Krylov Central Scientific Research Institute (St. Petersburg).

The idea's originality lies in the fact that these plants will use serial ships' reactors. The technical side of the concept is also out of the ordinary. It is obvious that realization of this project would make it possible to support the technical and production potential of a group of conversion factories. At the same time, this project, which has no equivalent in world practice, requires careful analysis from the socioecological point of view.

The SGN representatives visited a Baltic factory, where they looked at four reactor installations intended for installation in underground AES. They were also introduced to the technology used in the construction of the Lenmetstroy drifts—it has been proposed that they will be used in building underground mines. At a meeting with Vice Major Rear Admiral Vyacheslav Shcherbakokv, Mr. de la Bassetiert, the firm's commercial director, confirmed that SGN is prepared to take part in the project. The specific form that this participation will take will be agreed upon later.

Besides this, the Frenchmen proposed their services in neutralizing radioactive wastes from the Navy, as well as areas of radioactive contamination on the city's territory. This last proposal evoked much interest. It was decided that SGN's partner in eliminating the radioactive areas, of which over 200 are registered in Petersburg, will be the mayor's Committee on Preserving the Environment. Together with the Krylov Institute, they intend to develop a plan for burying the radioactive wastes which, as "KOMMERSANT-DAILY" experts suggest, will be based on a technology for glazing the wastes that is used in France.

Regulation of Nuclear Sector Inadequate

*93WN0250A Moscow ROSSIYSKAYA GAZETA
in Russian 13 Jan 93 pp 1-2*

[Article by Anatoliy Shramchenko, expert of the Russian Federation Supreme Soviet Committee for Issues of Ecology and Rational Use of Natural Resources and deputy chairman of the Association of Independent Experts on Safety in the Nuclear Power Industry: "The Empire of Nuclear Specialists Does Not Need a 'Nuclear Constitution'"]

[Text] An article by A. Romanov in ROSSIYSKAYA GAZETA (23 October 1992) once again discusses affairs in the nuclear sectors of industry and power generation. Its headline, "Orders Are To Advance—From an Unprepared Bridgehead and in an Unknown Direction," hits the bull's eye.

Indeed, the orders are precisely to advance. There was, and still is, no regular development in our nuclear industries. The government is betting on nuclear power stations with reactors which have already been compromised at the

Chernobyl and Leningrad power stations, and whose adequate safety has not been confirmed.

Indeed, there was, and still is, no prepared bridgehead: full-scale testing, model specifications and calculations of reactor safety, an optimized set of measures for protection of personnel and the populace against radiation, and a truly operational safety system. There are other concerns. An energy crisis is exacerbating the economic crisis. The need for power must be met at any price! The safety of reactors and technologies comes next.

Indeed, the offensive proceeds in an unknown direction. There simply is no precise, verified direction, because there is no design of a nuclear power station with an improved safety reactor. They have been working on it unsuccessfully for several years now: After all, they are looking for simple and cheap solutions based on old accomplishments. There is no such direction because the issue of radioactive waste handling is not being resolved: It is drained into temporary storage facilities because there is no industrial technology for solidifying liquid waste; because the creation of regional burial sites for solid waste in safe geological structures is stuck at the stage of technical and economic feasibility studies; because liquid waste containing plutonium is still injected underground at nuclear combines posing a threat of catastrophic radioactive contamination to water-bearing strata, even if remote; because ponds and rivers filled with radioactive water sit out in the open. The direction of the offensive is not known because there are no commonly accepted concepts of safety of nuclear technologies (primarily of nuclear installations) or concepts for ensuring the radiation safety of people and, finally, because there is no system of legislative acts which would regulate the safe use of nuclear energy and govern the types of operations and kinds of relations in which people engage while using nuclear energy.

The authors and inspirers of the government program for the development of nuclear energy cannot be unaware of all this. This is why raising the issue of some kind of offensive in nuclear industries is absurd in itself. All that is possible in this area at present is spontaneous expansion in the interests of a quite narrow circle of individuals—leaders of the nuclear department.

The peculiar state organism, which was first called the Ministry of Medium Machine-Building, subsequently the Ministry of Nuclear Energy and Industry, and now the Russian Federation Ministry of Nuclear Energy, has existed for more than 40 years. For more than 40 years it has operated without a legal foundation. Legislation in the area of the use of nuclear energy and radiation safety began to emerge only after the Chernobyl disaster. However, the rays of legislative regulation in the area of ensuring radiation safety appeared as late as the recently passed laws on the medical and disease-control welfare of the population and the protection of the natural environment. The rest of the laws are still at the draft stage.

In 1986 work on the law on the use of nuclear energy began, which has not been completed to this day. It has been conceived as a directly applicable law, whereby governance and regulation would apply only to what the leadership of the nuclear industries sanctions. The draft

was submitted for consideration to the Supreme Soviet of Russia as late as the fall of 1992.

In 1991 and 1992 a law on policy in the area of handling radioactive waste was developed. This is also a directly applicable law, which, in the interests of nuclear departments, envisages the creation of yet another independent nuclear department specifically for handling wastes. The draft was also transferred to the Supreme Soviet in the fall of 1992.

In 1992 a law on the radiation safety of the populace was urgently prepared. It is also a directly applicable act. However, in terms of its approach to regulation and governance on safety issues, it clearly contrasts with the above two laws because it reflects the interests of an independent department for medical and disease control supervision rather than those of nuclear specialists. The future of this law is very much in doubt.

In 1992 the development of two laws for the area of the defense uses of nuclear energy began; the laws reflect solely the interests of the defense industries to a considerable degree.

Finally, in November 1992, the draft law of the Russian Federation "On the Status of Territories Polluted as a Result of Chernobyl or Other Radiation Accidents or Those Exposed to the Risk of Radioactive Contamination" was published. It was prepared by the Committee for Ecology and Rational Use of Natural Resources. It is oversaturated with theoretical provisions from medical radiology and radiation hygiene and generalities about the safety of nuclear stations. This directly applicable law resembles a collection of quotes from scientific publications. It does reflect someone's specific interests, but it does not codify the status quo or establish the legal regime of territories which have been, or may be, affected by radioactive contamination.

As we can see, the familiar merry-go-round of spontaneous expansion is beginning to spin in the area of laying a legislative foundation as well. However, a system of legislative acts should be built organically, on the basis of commonly accepted concepts, in all areas of legislation, with the coordinated sequence of the development of individual laws taking into account their conceptually justified hierarchy.

This is where we come to the focal thesis, as we see it, which A. Romanov has repeatedly voiced on the pages of central newspapers. It is the thesis about the "nuclear constitution." What does this mean? It means the Russian Federation Law "On Fundamentals of Legislation in the Area of the Safe Use of Nuclear Energy and Sources of Ionizing Radiation." This law should legally codify the entire system of objects, subjects, and types of operations and relationships in the sphere in question. It should set forth the main principles of safety, its criteria, and norms. It should also include fundamental banning rules resulting from domestic and world experience. This law should codify the main terms and notions, determine the hierarchy of legislatively regulated safety requirements, and on this basis, establish a hierarchy of directly applicable laws and the main executive acts. This law should delimit the entire legal scope of the nuclear sphere. If this law comes along, the directly applicable laws will no longer duplicate

one another; contradictions between them will disappear; it will be clear which areas of the legal space are not yet covered by legislation.

However, this suits the empire of nuclear specialists least of all. This will mean the beginning of the end of this empire. If the law specifies subjects of nuclear law, every person will be able to influence the state of affairs in nuclear departments. Public organizations will be able to subject them to the procedure of public investigation (hearings). It will not be possible to ban rallies and demonstrations in the sanitary protective zones of nuclear power stations, as does the draft law on the use of nuclear energy.

In general, this is a "strange" draft. It does not include a definition of radiation safety. It does not say that it is mandatory to use commonly recognized international norms and recommendations of the IAEA [International Atomic Energy Agency] in our norms. Responsibilities and guarantees pertaining to the organs of state regulation, supervision, and monitoring of the safe use of nuclear energy are not determined unambiguously.

These are not mere shortcomings or defects. These are expressions of the imperial ideology of nuclear specialists. If only this were the case solely with draft laws! For example, an outline of safety guarantees ensured by the State Committee for Monitoring of Nuclear and Radiation Safety is completely absent in the texts of "Regulations on the State Committee under the Russian Federation President for Monitoring of Nuclear and Radiation Safety" and the "Policy Statement" of this committee. Likewise, it is not defined what the committee is responsible for. This is no accident. After all, all these drafts, regulations, and statements are written by like-minded people, and frequently by the same people.

The draft law on the use of nuclear energy does not contain provisions for a ban on the enactment of all kinds of temporary or special rules or norms which are crucial to our nuclear practices, despite the fact that such rules and norms have been the root cause of almost all of our radiation accidents at transportation and space reactors. They have also caused additional difficulties in providing radiation protection for the population in the accident zone around the Chernobyl Nuclear Power Station. The draft omits all facilities with technologically modified radiation backgrounds. This would have placed within the scope of legislative regulation the "holy of holies" of the empire of nuclear specialists—the radiation and ecological consequences of the mining and processing of uranium and polymetallic ores.

I believe that the time has finally come to invite the attention of the deputies to the actual state of affairs in nuclear departments.

Atomic Energy Ministry Promises Attention to Ecology

*OW1501200793 Moscow INTERFAX in English
1732 GMT 15 Jan 93*

[Following item transmitted via KYODO]

[Text] The program of nuclear power station construction which covers a period until the year 2010, which was

announced by the Government on December 28, 1992, is consistent with the ecological restrictions of the country, Ministry of Atomic Energy spokesmen said in a Moscow press-conference on Friday [15 Jan]. The public will have a say in carrying the program out; no construction will start without consent of the local government.

At the first stage, before 1995, three units whose power will total 3,000,000 kW [kilowatts] are scheduled to be commissioned in the Balakovo, Kursk, and Kalinin stations which were constructed following pre-1985 designs. The Kursk and Kalinin stations were scrutinized by the Ministry of Ecology in 1992; the Balakovo station will come under scrutiny in 1993. The Ministry of Atomic Energy will make the changes required by the ecological analysts before the units are put into operation.

The spokesmen made it plain that units 5 and 6 of the Balakovo, Yuzhno-Uralsk, and Beloyarsk power stations and also of the Voronezh nuclear heat supply station would not be commissioned without a State Ecological Expert Evaluation clearing.

Of the 11 Russian nuclear power stations 10 are operational; the Rostov station has been constructed but never launched. In 1992 they generated 119,624.70 million kW/h.

In the same year 205 emergencies were registered of which 174 as zero grade, three as medium, and 28 as mild or insignificant hazards in the International Scale of Events.

Construction Plan Promises To Revive Nuclear Power Industry

*93WN0250B Moscow KOMSOMOLSKAYA PRAVDA
in Russian 26 Jan 93 p 3*

[Article by O. Volkov: "'Peaceful Atom' Has Snapped Out of It, and Is Mounting an Offensive"]

[Text] It appears that the Russian nuclear power industry has finally recovered from the powerful blow it took in 1986, despite some experts predicting its complete demise, pointing to changes that have shaken the world in recent years: They said that the Soviet population, scared by the accident at the Chernobyl nuclear power station, would not allow the use of nuclear energy to expand.

Indeed, during the entire six years since Chernobyl, which have passed under the sign of perestroika and acceleration, a certain stagnation has been registered in nuclear power generation. They recalled our nuclear specialists only on account of various incidents which, to tell you the truth, were numerous, rather than, as used to be the case, in conjunction with commissioning yet another power unit (incidentally, only four have been commissioned in Russia since 1986).

By now it is already possible to say that the nuclear power industry, which was recently involved in all-around defense, is switching to the offensive, the success of which is largely preordained. This has to do with the fact that, in the 10 years to come, the service life of power units which were built in the early and mid-1980's will come to an end. This will mean additional, very significant difficulties for a country which is already experiencing a power shortage.

This is why it is not surprising that, on 28 December 1992, the government adopted a special decree, No. 1026, which actually confirmed a program for the construction of new nuclear power stations for generating heat and electric energy until the year 2010. Its initial stage calls for the modernization of operating power units and the commissioning of new ones to replace the units of the Bilibino, Novovoronezh, and Kola nuclear power stations which will be retired after the year 2000. Given the consent of regions and a favorable evaluation by the state ecological review, it would be possible to complete the construction and start up another eight units at the Balakovo, South Urals, and Beloyarsk nuclear power stations and the Voronezh AST [nuclear heating plant]. A technical and economic feasibility study is also being prepared at present for the construction of nuclear power stations and nuclear heating plants of a new generation in regions in which it is often just impossible to generate power in a "nonnuclear" mode: the territories of the Far North and the Far East, the lower Volga area, and the central part of Russia.

However, Unit 3 at the Balakovo nuclear power station, which has successfully passed ecological review, should begin operation as early as April of this year.

Before 1995 it is planned to start up yet another two, almost completed (70 percent), power units—at the Kursk and Kalinin stations. To be sure, at present it is impossible to predict the outcome of a state review of Unit 5 of the Kursk nuclear power station, where a modernized RBMK-1000 reactor with an upgraded safety system, and yet one with a tarnished reputation, is installed.

This is why the program pays considerable attention to the development of new, safer types of reactors—NP-500 and VPBR-600.

The issue of cooperation with the West remains open for now. In the words of Deputy Minister of Nuclear Energy Yevgeniy Reshetnikov, "frequently, the conditions of Western partners are just unacceptable to us." This has to do with the fact that, while foreigners would like to build their nuclear power stations on the territory of Russia, first, "we are capable of doing this just as well ourselves," and second, the "dirty" fuel cycle, with highly active waste and risk, will still remain in our country, whereas the absolutely "pure" electricity will flow to the West. However, this does not mean that Russian nuclear specialists intend to restrict their contacts with foreign colleagues. For example, imported equipment which monitors reactor safety is already installed at some of our stations.

Recommitment to Nuclear Power Backed

93WN0250C Moscow KRASNAYA ZVEZDA
in Russian 27 Jan 93 p 2

[Article by Mikhail Rebrov, KRASNAYA ZVEZDA, in the "Point of View" column: "Nuclear Power Stations Without Fear or Illusions"]

[Text] According to ancient mythology, "the world rests on three pillars." However, previously these were imagined to be giant elephants, turtles, or whales, whereas at present, real life leaves no doubt that energy, ecology, and the

economy are the three pillars on which human civilization rests. If any one of them is destroyed, catastrophe is unavoidable.

Literally at the finish line of last year (on 28 December), the government of Russia adopted Decree No. 1026 on the construction of nuclear power stations on the territory of the Federation. It actually amounts to a program for the development of power generation for the period until the year 2010. Will it be translated into reality?

That we live in an environment of paradoxes hardly comes as a surprise to anyone at present because dogmas about the "unity and struggle of opposites" have been drummed into us from childhood. This is perhaps the source of a contemplative or even altogether indifferent attitude toward the fact that, in their region, the residents of Rostov are heatedly protesting against an AES [nuclear power station], since they have not experienced a power shortage, whereas the residents of Yerevan are demanding, just as stormily, that the once shut-down nuclear power station be brought back to life. This appears to be a strange situation. However, it reveals the profound meaning of what is happening: Things are on occasion naively interpreted, and on occasion, reflect the ambitions if not the incompetence of participants in rallies.

Indeed, the tragedy of Chernobyl has caused mass radio-phobia and brought about the militant rejection of nuclear power generation and the widespread conviction that it would be better to go back to "kindling and dung cakes" as long as the frightening AES's are not around. However, let us reason: What will happen if all nine AES's in Russia, with their 28 power units, are shut down? What does our society stand to lose by virtue of this? Let us start with specific examples, without which it is difficult to shed both illusions and fear.

At present, the per capita consumption of primary energy resources in our country amounts to 6.7 tonnes of standard fuel a year (for comparison, in Western Europe it is 5 tonnes, and in the United States—11 tonnes). The energy sector claims from the national economy approximately one-quarter of all capital investment and one-fifth of labor resources. With all of this, it barely meets the needs of our households and production facilities. So, the AES's of Russia, with a total installed capacity of 20,242 megawatts, account for more than 11 percent of the output of electricity. The total volume of fossil fuel savings comes to 40 million tonnes a year (incidentally, the idling of power units prepared for operation brings about losses going into millions daily).

One more point. TES's [thermal power stations] account for the bulk of electricity generation (60 percent), to which end 211 million tonnes of standard fuel are used, or 41 percent of the gas used in Russia, 14 percent of the oil, and 37 percent of the coal. Besides, the peculiarities of the Russian economy are such that the main energy resources are located in the eastern regions of the country, whereas the European section is responsible for about 70 percent of the total output and consumption of electricity. About 20 percent of all fuels produced are used to deliver energy to these regions. Such is the price of "nonnuclear" electricity.

More than 75 percent of energy is generated on our planet as a result of the processing of fossil fuels. In the process,

21 billion tonnes of carbon dioxide are emitted into the atmosphere annually, which threatens a global ecological catastrophe.

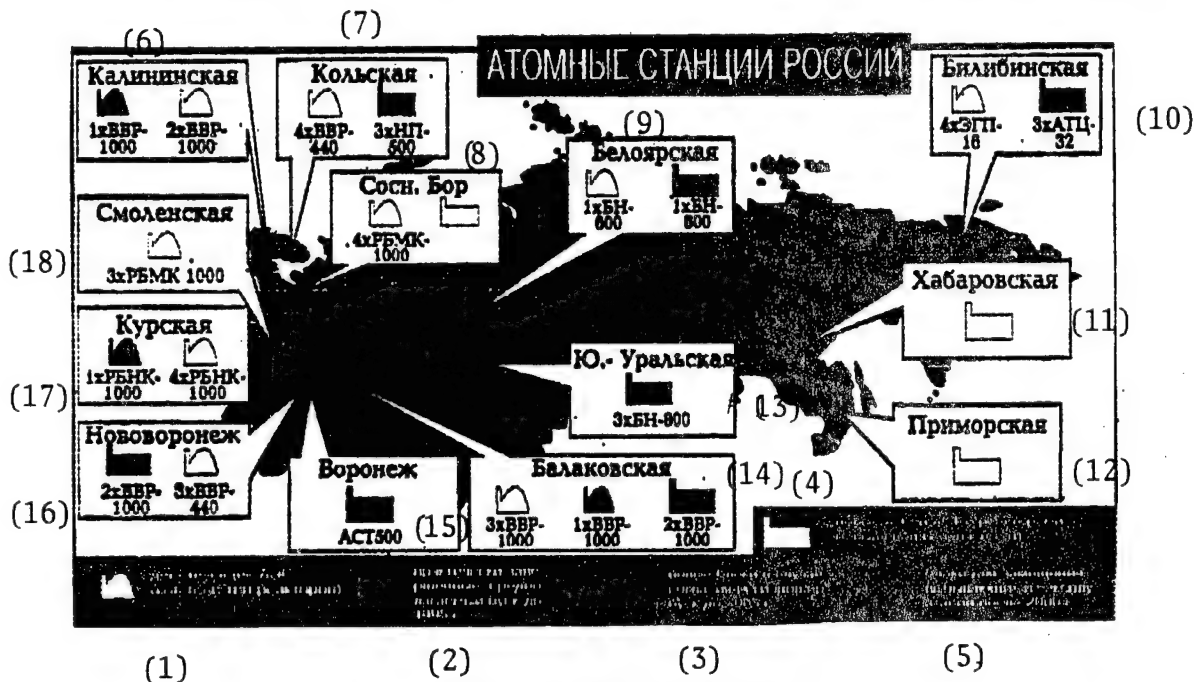
Along with our entire economy, the fuel and energy complex has great inertia because of its resource intensiveness. Production falls in two to three years (if investment is stopped), whereas it takes as many as eight to 10 years to restore the previous volume (if additional investment is made).

As far as mothballing AES's is concerned, the picture is as follows. The gradual decommissioning of operating power units (over 10 to 15 years) will call for the additional generation of 12 to 13 percent more energy. Hydropower stations and other sources (wind, the sun, tides, and subsurface heat) will not be able to offset the deficit that

emerges. So, do we use oil and gas? We have already described the price for this solution.

The fear of radiation is understandable. As early as the time of Hiroshima and Nagasaki, humanity understood what one of the greatest discoveries of science can turn into. The accidents at the American AES "Three Mile Island" and Chernobyl became yet another reminder of the latent danger. Of course, all progress, including that of nuclear power generation, entails certain risks. However, for the sake of objectivity it should be acknowledged that the unsatisfactory operation of the general industry equipment of the AES's, human error, and an inadequate level of organization of operations have become the main reasons for all the unplanned shutdowns of power units.

However, let us revisit the topic of what is going to happen if the AES's are closed down. Of course, background



Nuclear Power Stations in Russia

- Key: 1. Operating nuclear power stations (number and type of reactors)
 2. Virtually complete, expected to be started up before 1995
 3. New units in the event of consent by regions; expected start-up before 2005
 4. New nuclear power stations and nuclear heating plants with improved safety reactors
 5. Units replacing those decommissioned after the year 2000
 6. Kalinin—1 x VVR-1000, 2 x VVR-1000
 7. Kola—4 x VVR-440, 3 x NP-500
 8. Sosnovy Bor—4 x RBMK-1000
 9. Beloyarsk—1 x BN-600, 1 x BN-600
 10. Bilibino—4 x EGP-16, 3 x ATTs-32
 11. Khabarovsk
 12. Maritime
 13. South Urals—3 x BN-800
 14. Balakovo—3 x VVR-1000, 1 x VVR-1000, 2 x VVR-1000
 15. Voronezh—AST-500
 16. Novovoronezh—2 x VVR-1000, 3 x VVR-440
 17. Kursk—1 x RBNK-1000, 4 x RBNK-1000
 18. Smolensk—3 x RBMK-1000

radiation will diminish, but only by one percent, and somewhat more on the sites of the stations proper: by five to 10 percent. At the same time, an increase in the percentage of fossil fuels to offset losses in electric energy will bring about the tremendous consumption of atmospheric oxygen, and because of the use of coal, greater background radiation as well.

This is why it is unbecoming to practice wishful thinking or give in to emotions when making decisions on energy issues. To possess energy resources and to be able to manage them properly means to have a reliable foundation for accomplishing all social tasks. The energy sector is likely to be the very sphere in which the building of a regular market economy will begin. This is why we do not need extemporaneous decisions in our AES policy (to close down, to ban, to give up, and so on), but a well-considered and scientifically justified concept for the development of nuclear power generation bolstered by ecological expert reviews, and a concept geared toward the development of new-generation technology with a qualitatively better safety level (such designs are already available).

There is no throwing obstacles in the path of scientific and technical progress. Whether we like it or not, fission-based nuclear power generation, by advancing technology and science, is blazing the trail for the wide-scale assertion of the thermonuclear power generation of the next century, as well as opening unique opportunities to directly transform nuclear energy into electricity, regenerate nuclear and thermonuclear fuel, and synthesize artificial elements endowed with necessary properties...

Since we have recently gotten used to hanging on every word of the West, I will mention their situation with AES's. In France, nuclear electricity factories account for 74.6 percent of total energy generation; in South Korea, it is 50.2 percent, in Sweden—45.1 percent, in the FRG—33.9 percent, in Japan—27.8 percent, and in the United States—20 percent. Within the same period of time, Japan intends to double power generation by AES's.

The reader might say: "However, over there everything is better and safer. They demand that our AES's be closed, and promise to help us with funding." Talk is cheap (pardon the uncultured expression). "The standard of future Russian technological solutions for AES safety is not inferior to the best Western developments, and is frequently superior..." This is a quote from official findings. Let me also recall that all our AES's have been inspected by IAEA [International Atomic Energy Agency] experts and found reliable and safe. As far as funding supposedly promised for reconstruction is concerned, so far nobody has given us a kopek, and they hardly will. Their calls "to close down" proceed from hidden benefits for themselves.

Having opened these notes, perhaps subjective in a way, with opinions on paradoxes, I would like to likewise finish with them. Russia became the first country to use the peaceful atom when it started up the AES in Obninsk as early as 1954. To this day, Russia is also the one lacking a law on the use of nuclear energy, which is supposed to provide a legal foundation for the secure development of the industry. However, even this is no reason to go back to kindling, really.

Nuclear Energy Program Enjoying Renewed Optimism

93WN0270A Moscow IZVESTIYA in Russian
6 Feb 93 p 15

[Article by Sergey Leskov, IZVESTIYA: "Nuclear Energy Has Made It Through the Winter and Is Radiating Optimism Once Again"]

[Text] The Government of Russia has adopted a decree "On Construction of Nuclear Power Plants on the Territory of the Russian Federation," a program for the broad development of nuclear energy in the country up to the year 2010.

In recent years, if we have thought about nuclear energy at all it has been solely in connection with the \$24 billion promised by the West for the reconstruction of our nuclear power plants. But with time it is becoming increasingly apparent that neither Russia nor other CIS countries will receive any of this sum.

The deputy minister for nuclear energy of Russia, Yevgeniy Reshetnikov, thinks that the reason is that Western competitors are blocking all the earmarked transactions. The foreigners want either to build the nuclear power plants on the territory of Russia or to deliver large installations to us. To agree to this version would mean a real degradation of one of the most powerful branches of Russian industry. Our side is prepared to cooperate, but in most cases the branch, which has its own high technologies, needs only know-how, equipment, and machine tools. Nobody has any more doubts: Russian nuclear energy will have to rely on its own forces in the near future.

The situation in nuclear energy is changing also because the traditional sources of energy—coal and oil—are becoming less and less reliable, and the construction of hydroelectric power plants causes irreparable harm to nature. Even today it is impossible to imagine the economies of many regions without nuclear energy. The share of nuclear power plants in the production of electric energy in the center of the European part of Russia is 25 percent, in Leningrad Oblast—60 percent, and on the Kola Peninsula—75 percent. But after the year 2000, their resources having been exhausted, blocks of the Bilibin, Leningrad, Novovoronezh, and Kola nuclear power plants will be shut down. The objective reality is such that today it is impossible to suggest any other economically justified path to the development of the fuel and energy complex than the construction of nuclear power plants.

According to the government decree, in the first stage three energy blocks with a total capacity of 3 million kilovolts are to be introduced before 1995 at the Balakov, Kursk, and Kalinin nuclear power plants. With the consent of the regions and a positive evaluation from state ecological experts, before the year 2000 it will be possible to start up five more blocks at the Balakov, South Ural, and Beloyarsk nuclear power plants and the Voronezh nuclear heat supply station. The only area still somewhat unclear has to do with the fifth block of the Kursk nuclear power plant, where a RBMK [channel type graphite moderated] reactor of the "Chernobyl" type has been installed. But specialists are hoping that the state experts will agree that its fundamentally modernized version is in no way reminiscent of its infamous predecessor.

It is important to note that from now on, according to legislation, the final decision on construction of even the most promising nuclear power plant will be made not through the department but only with a positive decision from the State Ecological Expert Commission and the consent of the local and territorial authorities.

Relations between Russian nuclear scientists and their colleagues from the sovereign states of the former USSR are not developing smoothly. One remembers when in Krasnoyarsk the local authorities refused to accept spent fuel from Ukrainian nuclear power plants, which violates international agreements made by Russia. Now the conflict has flared up once again. In principle Russia is to deliver fuel and take it back from Ukraine for a certain payment. Technical support for Ukrainian nuclear power plants and consultation services by Russian specialists are rendered along the same lines.

In Lithuania, after many "Greens" obtained state positions and learned about the condition of the economy, passions concerning the Ignalina nuclear power plant died down. The plant produces more than 60 percent of the

electric energy and, with extremely unstable deliveries of oil and gas, is the most reliable support for the country's economy.

In exactly the same way in Armenia they are gaining an increasingly keen understanding of the need to start up their own nuclear power plant, which was mothballed back in the comfortable times of the USSR. Russian specialists are prepared to render the necessary services to Armenia, but starting up the nuclear power plant under current conditions will take no less than two to two and a half years. Moreover, as is thought in the Ministry of Atomic Energy of Russia, it will be necessary to have a legal basis for the presence of foreign nuclear specialists on the territory of the sovereign state.

The abundance of nuclear energy department plans, which seem quite realistic, shows that the long lull in Russian nuclear energy is coming to an end. One would hope that criticism directed against the department and close communication with opponents have taught the nuclear energy workers to be extremely responsible with their plans, which form now will guarantee that the "peaceful" atom will remain just that.

Startup (X) of energy blocks at nuclear power plants before 2010

Name of nuclear power plant, No. of block	Capacity, megawatts	1992-1993	1996-2000	2001-2006	2006-2010
Completed					
Balakov, 4	1,000	X	—	—	—
Kursk, 5	1,000	X	—	—	—
Kalinin, 3	1,000	X	—	—	—
Replacing those withdrawn					
Bilibin, 5	32	—	—	X	—
Bilibin, 6	32	—	—	X	—
Bilibin, 7	32	—	—	—	X
Novovoronezh, 6	1,000	—	—	X	—
Novovoronezh, 7	1,000	—	—	X	—
Kola, 5	630	—	—	X	—
Kola, 6	630	—	—	X	—
Kola, 7	630	—	—	—	X
New energy blocks					
Balakov, 5	1,000	—	X	—	—
Balakov, 6	1,000	—	—	X	—
Voronezh Nuclear Heat Supply Plant, 1	500	—	X	—	—
Voronezh Nuclear Heat Supply Plant, 2	500	—	X	—	—
South Ural, 1	800	—	X	—	—
South Ural, 2	800	—	—	X	—
South Ural, 3	800	—	—	X	—
Beloyarsk, 4	800	—	X	—	—

Startup (X) of energy blocks at nuclear power plants before 2010 (Continued)

Name of nuclear power plant, No. of block	Capacity, megawatts	1992-1993	1996-2000	2001-2006	2006-2010
New nuclear power plants and nuclear heat supply plants					
Far Eastern, 1	600	—	—	X	—
Far Eastern, 2	600	—	—	—	X
Maritime, 1	600	—	—	X	—
Maritime, 2	600	—	—	—	X
Khabarovsk Nuclear Heat Supply Plant, 1	500	—	—	X	—
Khabarovsk Nuclear Heat Supply Plant, 2	500	—	—	X	—
Sosnovyy Bor, 1	530	—	X	—	—
Storage of spent nuclear fuel					
Smolensk (Spent Nuclear Fuel Storage Facility)		X	—	—	—

Government Considers 'Radiation Rehabilitation' of Urals

Formerly Classified Document Details Accidents
93WN0258A Moscow ROSSIYSKIYE VESTI
in Russian 27 Jan 93 p 1

[Article by Ye. Slavskiy: "Whose Sins Are We Paying for Today?" Designations "Secret" and "Top Secret" are as published in original Russian source]

[Text] On 27 January a session of the Russian Federation Government will examine the draft State Program for Radiation Rehabilitation of the Urals Region and Measures To Assist the Victimized Population.

How many secret Chernobyls our country has had to endure! The location of one of them is—the Urals. For years the land and rivers here have been poisoned, and people irradiated. Only after decades has the new Russia revealed its former secrets, and the Government, even under today's extremely difficult conditions, has finally found the opportunity to assist people who were victimized at that time by a radiation catastrophe in the Urals. Only now are the details becoming known. Today for the first time ROSSIYSKIYE VESTI publishes this formerly highly classified document from the "special file" of the CPSU Central Committee Politburo.

At the next session of the Presidium of the Council of Ministers—Government of the Russian Federation, with Viktor Chernomyrdin presiding, only one issue will be examined—the draft Russian Federation State Program for Radiation Rehabilitation of the Urals Region and Measures To Assist the Victimized Population for the Period Until 1995. Vasily Voznyak, chairman of the Russian Federation State Committee on Chernobyl, will give a presentation on this matter. The Urals Program has been formulated along the lines of the Chernobyl one—it just specifically encompasses the Urals Region. Today assistance is being rendered to victims in the channels of the decree of the Russian Federation Supreme Soviet and

government on compensation and benefits to Chernobyl victims. The new program will enable this assistance to be more specifically directed.

If the program presented today is approved, it will be sent to the Supreme Soviet for confirmation. But it will be necessary to find more than R4 billion [rubles] to pay for benefits to victims.

Reference Information

Over the course of 1949-1956, radiochemical waste products were discharged into the South Urals river Techa. In 1957, as a result of the superheating of one of the containers for storing liquid, highly radioactive waste, and subsequent explosion of the nitroacetate salts contained in it, radioactive substances were dispersed by the wind over significant distances in Chelyabinsk and Sverdlovsk Oblasts. As a result, 13 rayons and the cities of Kyshtym and Kamensk-Uralskiy were subjected to contamination, and 124,000 (450,000 according to another source) people were irradiated in Chelyabinsk, Sverdlovsk, and Kurgan Oblasts. A narrow strontium trace with contamination density along the isoline of 0.2 curies per square kilometer stretched out in a narrow strip from Kyshtym to Kamyshlov. The effective equivalent dosage to which residents of certain population centers along the river Techa were exposed amounted to 5-10 rems by 1990.

CPSU Central Committee TOP SECRET [as published]

I report that at Combine No. 817, at 1620 hours, on 29 September of this year, there was an explosion of an underground storage tank (250 cubic meters in volume) holding radioactive solutions obtained at the radiochemical plant during the production of plutonium.

A careful and thorough investigation of the reasons for the explosion and its consequences was conducted, with a visit to the site, by a special commission under my chairmanship, comprising scientists and specialists. This commission also developed measures to eliminate the consequences of the incident and to provide warning of possible future explosions.

The commission established that the explosion had occurred in storage tank No. 14. in a complex consisting of 20 such tanks.

The cause of the explosion, according to the conclusion of the commission, was the interaction of hydrogen with nitrogen oxides capable of spontaneous explosion.

The radioactive solutions in the storage tanks decompose water and release hydrogen. On the other hand, the radioactive solutions release a significant quantity of heat by virtue of the radioactive decay of the elements.

The heat released by the solutions under these conditions caused the latter to reach a hard boil, the water to evaporate, and nitrogen oxides to be released as a result of decomposition of the nitrates.

The overheating of radioactive solutions in the storage tank occurred due to gross violation of tank-cooling procedures.

As a result of the explosion of the storage tank, a portion of the radioactive solutions in the form of spray and aerosols was discharged and carried by the wind in a northeasterly direction over a distance of more than 25 km, within a relatively narrow sector (from 1 to 5 km wide).

Some of the construction area of the new radiochemical plant at the combine became contaminated in this process. Work here has been temporarily halted.

Also included in the contaminated area of the combine were structures housing military construction units and a prison camp. People were taken out of this area and placed in uncontaminated locations.

There were no casualties accompanying the explosion and destruction of buildings.

No plants of the combine terminated operation.

Contaminated outside the combine area in the direction of movement of the radioactive substances were soil, vegetation, livestock, and reservoirs.

Three villages of Chelyabinsk Oblast fell into the radioactive contamination zone: the village of Berdyanish (85 homes, 580 people), village of Satlykovo (46 homes, 300 people), and village of Golikayevo (97 homes, 1,028 people).

The strontium-90 contamination of territory in these villages and in the rayon in general outside the combine area will be persistent, making these areas unsuitable for prolonged habitation or use.

Investigating the cause of the explosion on location, the commission believes the following individuals are the main guilty parties in this incident: Comrade Pashchenko, head of the radiochemical plant, and Comrade Yermolayev, the plant's chief engineer, who permitted gross violations of technical regulations governing the operation of radioactive solution storage facilities; Comrade Demyanovich, combine director, and Comrade Mishenkov, chief engineer of this combine, who knew of these violations and took no measures to effect strict observance of applicable directives for the operation of the storage facilities.

The commission, jointly with the secretary of the Chelyabinsk CPSU Obkom [oblast party committee] (Comrade

Laptev) and deputy chairman of the Chelyabinsk Oblispolkom [oblast executive committee] (Comrade Mamontov), have developed and coordinated, and are now carrying out, measures aimed at following the required medical procedures and averting illnesses of the population from radiation sickness.

It was decided to temporarily resettle the population of the village of Satlykovo, the most seriously contaminated area, in the sovkhos of the combine prior to 5 October.

The populations of the villages of Berdyanish and Golikayevo, which territories are less contaminated, must also be resettled prior to 1 March 1958.

Permanent dosimeter monitoring stations have been set up in these villages to see to it that radioactivity does not carry into the homes and to manage the work of decontaminating the villages.

Measures have been confirmed for the combine with respect to reestablishing the normal operation of all active complexes storing radioactive substances.

Measures have been confirmed with respect to eliminating the consequences of the explosion in the affected complex storing radioactive substances, as well as measures to set up tank cooling procedures for this complex so as to avert the possibility of future explosions.

Measures have been confirmed with respect to decontaminating part of the territory in which the radiochemical plant was being built and reinstituting efforts to continue its construction.

The ministry has dispatched necessary materials and equipment to the combine in order to eliminate as quickly as possible the consequences of the explosion and to decontaminate the affected territory.

The ministry has sent a large group of designers to the combine to develop designs on site which will enhance the operational reliability of the complexes storing radioactive substances, and to study this incident with the aim of effecting design changes on new radiochemical plants being constructed.

I submit the draft Decree of the USSR Council of Ministers, and I ask that it be examined and confirmed.

Council of Ministers Presidium Approves Program
LD2701180593 Moscow ITAR-TASS in English
1740 GMT 27 Jan 93

[By ITAR-TASS correspondent Ivan Ivanov]

[Text] Moscow, January 27 (TASS)—The presidium of the Russian Council of Ministers approved at Wednesday's meeting the state programme of the Russian Federation on radiation rehabilitation of the Ural region and measures to render assistance to the affected population for a period ending in 1995.

The measures will give assistance to a total of 450,000 people who suffered from the accident and imperfect technologies at the Mayak production association in the Chelyabinsk region in the 1940s-50s.

Vasily Voznyak, chairman of the Russian State Committee for Social Protection of Citizens and Rehabilitation of

Territories Contaminated by the Chernobyl and Other Radiation Catastrophes, said that the programme, spanning a period until 1995, envisages social, economic, rehabilitation, production, scientific, research, ecological and other measures aimed at liquidating the consequences of accidents at the Mayak production association (Chelyabinsk '65). Total expenditures for the programme, financed from the federal budget, are set at 11.7 billion roubles. Compensations and benefits to the population exposed to radiation will require 4.2 billion roubles. Social and economic rehabilitation of territories and health protection schemes will be allocated 3.2 and 1.6 billion roubles respectively.

Speaking about the need to adopt the programme, Voznyak recalled that radioactive contamination of the Ural region, which includes territories of the Chelyabinsk, Kurgan and Sverdlovsk regions, came mainly from the 40-year activity of the Mayak association. From 1949 to 1956 Mayak, which had no adequate technologies, released into environment wastes of radiochemical production. In 1957 one of the containers with liquid radioactive wastes exploded. According to Voznyak, some 450,000 people were affected, of them 50,000 "in radiologically perceptible doses". The sum total of radioactive discharges here is estimated at more than 1 billion curie which is equal to "twenty Chernobyls", Voznyak said.

The programme provides for measures to normalise the situation in the Ural region, primarily, to lessen the likelihood of new radioactive accidents and catastrophes, measures to eliminate potential sources of radioactive contamination, control over the ecological and radiation situation and rehabilitation of territories, health protection of the population exposed to radioactive contamination, sanitary and economic rehabilitation of contaminated territories.

Prime Minister Viktor Chernomyrdin told the meeting that that programme was long overdue. After a two-hour debate, the presidium decided to adopt the programme and after revision to submit it for endorsement by the Supreme Soviet.

The presidium also endorsed resolutions on the federal supervision of mining and industry and on the state committee of the Russian Federation on construction and architecture.

Scientists Demand People Be Resettled From Kirov Radioactive Area

*LD2201230193 Moscow ITAR-TASS in English
1847 GMT 22 Jan 93*

[By ITAR-TASS correspondent Vitaliy Ilgov]

[Text] Kirov, January 22 (ITAR-TASS)—Three villages situated near the confluence of the rivers Cheptsa and Vyatka in the Kirov region, north-east of Moscow, have for decades been affected by radioactivity emanating from an ore deposit discovered here in the early sixties. The deposit was listed under the "top secret" heading and the population was held in ignorance of the danger in an atmosphere of secrecy characteristic of the cold war period.

That the radiation background was above normal and water migration of uranium 238 made water in the local rivers and

mushrooms and berries in the local forests high risk factors became public knowledge only when plans began to be made to build a new recreation zone in the area.

The local town officials said no mass-scale diseases among local inhabitants have been reported, but scientists are resolute in their demand that all people who have lived in the area for 15-25 years are in need of urgent medical examination. Specialists from the All-Russia Geological Research Institute also insist that the Karintorf enterprise be shut down and the inhabitants of the three villages be relocated.

The public demands that all details of the "uranium affair" be clarified and the persons who kept the monstrous experiment secret for so many years be named and called to account.

Conference Examines Problems of Small Cities Near Nuclear Plants

*PM2901152193 Moscow ROSSIYSKAYA GAZETA
in Russian 28 Jan 93 First Edition p 2*

[Interview with Yevgeniy Markov, president of the Union of Small Cities, by Olga Kondratyeva under the rubric "Small Cities of the Fatherland"; place, date not given: "We Do Not Want Another Chernobyl"]

[Text] A conference of representatives from cities built to service nuclear electric power stations has been held in the charmingly named city of Sosnovyy Bor near St. Petersburg. This conference of small cities was itself "small-scale": There are only eight such nuclear power stations in Russia, not counting Obninsk, where the nuclear electric power station is of a research rather than an industrial nature. The conference participants included city soviet chairmen, heads of administrations, and representatives of station management and the medical services. Yevgeniy Markov, president of the Union of Small Cities, gives an account of the results of the conference's work:

[Markov] The small cities of the Russian Federation include a group of newly-formed cities—unlike the old historical centers—which have grown up around giant industrial plants, including enterprises connected with the technology of the modern electric power industry: These are small cities located near nuclear electric power stations.

One of the main issues touched on at the conference was the problem of creating a 30-km zone around these cities—as a zone of heightened readiness for any kind of emergency or malfunction in the station's work. This zone should be kept under special surveillance by the city authorities and the radiological service.

[Kondratyeva] Should there be a distance of 30 km between the nuclear electric power station and the city?

[Markov] Not necessarily. The optimum distance was once thought to be 15 km. It is true that the safety of nuclear stations has increased recently and a trend toward reduced power output has become apparent. But Sosnovyy Bor is situated just 4 km from the nuclear electric power station. This is hardly permissible. And the 30-km zone is a zone of special organizational and sanitary surveillance around the station.

The participants at the conference also discussed demands to develop small cities close to nuclear electric power

stations. Operators and other technical personnel at stations should live in more comfortable conditions and have a special work regime since their behavior ensures the accident-free running of the nuclear power station to a considerable extent. But support for the legal and financial basis for developing "nuclear cities" is the task of the executive and legislative branch at federal level, certainly not at local level. This is not some whim on the part of the regional authorities, it is a condition for the safe operation of stations.

Unfortunately, a trend is becoming apparent today whereby responsibility for resolving these and other issues is being transferred to subjects of the Federation—the oblast centers.

[Kondratyeva] Do you mean the policy of decentralization giving more autonomy to the local organs of power, which was reflected in the Federation Treaty?

[Markov] The idea of decentralizing and developing local self-government is very much the right one. But in practice trends toward administrative concentration and centralization are currently gathering pace again in the country's administration, and this was spoken of with alarm at the conference. I meant something else, however—the need for the state to pay attention to installations such as nuclear electric power stations and nearby cities. The oblast authorities are in no position to resolve the problems of these small cities. For example, the cost of living in Sosnovyy Bor is higher than in St. Petersburg. A loaf of black bread costs over 30 rubles.

[Kondratyeva] Why is this?

[Markov] The high price of food and goods is the direct result of the departmental nature of city trade and the monopoly character of the trading bases. The city authorities are prepared to help create a competitive environment, but nobody is taking this task in hand. The "nuclear" cities are insisting that they be given greater autonomy in privatization, in the destatization of industry, and in determining land-use policy, since they have certain specific characteristics: Isolation from the surrounding rural locality, a unique cadre potential, and their own special way of life. It is impossible to take account of all this from the center.

[Kondratyev] Did you talk about the lessons of the Chernobyl disaster at the conference?

[Markov] Not directly, but the lessons of the disaster were very much in the air. For example, the discussion about the need for a 30-km zone is an echo of the Chernobyl tragedy. Specialists who moved from Pripyat to other centers of the nuclear electric power industry are still experiencing problems—problems to do with finding them work, adapting them to new surroundings, and providing them with housing. The fire at the Chernobyl nuclear electric power station showed how much depends on personnel: Their skills and the ability to choose the one correct solution in an emergency.

The conference stressed the community of interests of small cities regardless of their type. They are bound together mainly by misfortune and hardship, a "sharp angle" of entry into the market economy. For decades they have not been paid sufficient attention, primarily in the

material sense, including the satellite cities of nuclear electric power stations, although considerable capital seems to have been invested in them. Today the main thing is for them to look to their own potential, but bearing in mind that the government and society should not cast off their concern for the development of small towns altogether. They are Russia's future. America gambled on developing its small cities long ago. Let us learn from somebody else's experience, and not just draw belated lessons from our own sometimes sad and tragic experience.

High Radiation Recorded at Zagorsk Nuclear Disposal Site

AU0402133193 Hamburg ARD Television Network in German 2130 GMT 3 Feb 93

[Report by Hans-Josef Dreckmann]

[Excerpt] [passage omitted on general background of nuclear pollution in the former Soviet Union] Last weekend in Moscow: A convoy of trucks with radioactive waste is speeding through the northern outskirts of the city. The trucks are heading for the Zagorsk area, Russia's old religious center, some 80 km away from the capital.

Here is a large—70 hectare—disposal site for the treatment of waste from Moscow's 11 reactors [video shows snow-covered area with wire fence boundary]. The disposal site was hitherto regarded as secret. Now for the first time our Russian colleagues have visited the place for us with cameras. The containers with the radioactive waste are stored in subterranean concrete rooms. The very moment these rooms are opened, radiation rises to a level one thousand times above normal levels.

Nevertheless, the safety engineer claims that this method is absolutely not dangerous. The site is controlled 24 hours a day by monitors and sensors, which means there is no danger for the country or the people, the safety engineer says.

Yet, the head of the engineering department indicates that things do not seem to be quite as unproblematic as described by the safety expert. He admits that the 2,000 employees are granted special conditions: they retire at 50, only work 36 hours a week, get a special diet and extra money—conditions that are appropriate for the difficult job.

People in the villages surrounding the disposal site no longer believe in the soothing words of the engineers. The people are strictly forbidden to collect mushrooms or berries. In a wide circle around the plant it is also forbidden to grow vegetables and fruit, a measure that, of course, nobody respects.

A farmer says that he used to work in the disposal site and knows everything. After all, he witnessed how radiated clothes, such as pilot jackets, were not destroyed according to the rules, but smuggled out by the workers, who either wore them themselves or sold them. That is how things work at the disposal site. According to this man, people say that one should visit the cemetery and ask themselves why so many people here die between the ages of 25 and 35. The people are scared and have little confidence in the authorities.

Missile Fuel Destruction Plans Cause Concern in Voronezh

PM1102113793 Moscow PRAVDA in Russian
9 Feb 93 p 2

[Valeriy Stepnov report: "Hard Labor Under START II—One by One the Secrets of the Military-Industrial Complex Are Being Revealed. The Latest 'Flared Up' in Voronezh"]

[Text] Voronezh—Shortly after the signing of START II and the events in the top-secret Siberian city near Krasnoyarsk, which was seriously endangered due to the careless handling of toxic rocket fuel, talk has emerged in Voronezh of a catastrophe set to overwhelm the city. It is alleged that there are plans to bring fuel, from missiles being dismantled in line with the treaty, to Voronezh to be burned off here.

This might be considered idle gossip in some places, but not in Voronezh. On the city's outskirts, amid the suburban summer houses, a test range is in operation under the "Khimavtomatika" Design Bureau. The design bureau develops and tests liquid-propellant rocket engines, including those using heptyl. This is the very same substance which the press reported on in such detail following the events near Krasnoyarsk. Along with its high energy-producing qualities, it possesses toxic properties. If it gets into the respiratory tract it causes pulmonary edema. It cannot be eliminated from the body. It accumulates in the liver. Workers at the test range are advised to wear gas masks at all times.

But for all that, attitudes toward heptyl at the Design Bureau are quite casual. They have been working with it for over 30 years—they are used to it. And today, when missile production is falling rapidly and the Design Bureau must confront the enormous problem of keeping personnel at its test benches in employment, offers to burn off heptyl reserves are unlikely to be refused here.

After all, dangerous fuel has to be gotten rid of somehow. The whole question is: How? By harming the economy, the environment, and one's own health, or profitably, and without any damage?

We saw the ostentatious programs on central television about the destruction of solid-propellant rockets. The dynamite is fastened to the casings, it is detonated, and then tonnes of valuable alloys showered the steppe. It is effective, but wasteful. Immediately afterward, they showed how the Americans destroy their missiles. The casing is cut up, compressed, and made ready for future processing. It is quiet, unexciting, and economical. Is it really the case that there is no sensible means of disposing of heptyl?

I put this question to the leaders of the "Khimavtomatika" Design Bureau. We agreed beforehand that our conversation should not be for purposes of sensationalism, but to offer reassuring, thorough information to the public on the state of things.

"At present there are three known options for destroying heptyl. The first is the simplest, and the most expensive—it is burned in engines fastened to stationary rigs. The equipment is there, the experience is there, the people are trained. It could begin tomorrow. There is, however, a major 'but.' Each engine used for these purposes has a very

limited life. No sooner has the life of one expired than you have to install another. An engine production unit would have to be set up. And whereas 1kg of heptyl costs 240 rubles [R], it will set you back around R80 to burn it off in an engine. And given that reserves run into tens of thousands of tonnes, their destruction will cost billions.

"The second option is to use heptyl as a supplementary component for new 'kerosene' class rocket fuel, but with better energy-producing characteristics. Just a small proportion of what must be destroyed would be required for these purposes.

"Finally, the third option is to burn heptyl as a regular fuel in boiler rooms to obtain electricity and heat. Emissions from combustion will retain no more toxic substances than those resulting from burning coal or fuel oil. Naturally, specialized equipment, superior operating methods [vysokaya kultura ekspluatatsii], and irreproachable safety techniques will be required. You cannot mess around with heptyl—it has to be treated with respect.

"The remaining oxidizing agent—nitrogen tetroxide—could be given to the chemical industry to produce mineral fertilizers."

The St. Petersburg Institute of Applied Chemistry created heptyl. It has also been tasked, in conjunction with the Russian Federation Defense Ministry, to solve the question of its utilization. Clearly, chemists, economists, Health Ministry experts, and the chemical protection services will be involved in the work.

So there we have it. Nothing has happened yet, but the problem exists. It will not solve itself. It has to be believed that there is sufficient scientific and technical potential in our country to avoid mistakes in fulfilling our obligations under START II. And, of course, common sense—so as not to start the heptyl "bonfire" on the outskirts of a city comprising a million inhabitants.

Committee Set Up To Prevent Underwater Ecological Disasters

PM2601164393 Moscow ROSSIYSKAYA GAZETA
in Russian 26 Jan 93 First Edition p 2

[Aleksandr Mozgovoy report under the "Briefing" rubric: "Time To Clean the Oceans"]

[Text] "The seal of one of the units of the reactor's first loop has broken on the submarine Komsomolets, which sunk in the Norwegian Sea in April 1989, which has led to an insignificant rise in the level of radiation. But it does not pose a threat to the environment and will not do so in the foreseeable future." A statement to this effect was made by Tengiz Borisov, chairman of the recently created Committee for Special-Purpose Underwater Operations [KOPRON], in a briefing held at the Ministry of Foreign Affairs Press Center.

According to Borisov, a far greater cause for alarm for the committee which he heads is the state of the two torpedoes carrying nuclear warheads. As a result of corrosive processes, the plutonium contained in them could get into the water, which would cause significant damage.

The KOPRON is meant to deal with this and many other similar problems. Including: Eliminating and preventing

ecological disasters at sea and inland reservoirs connected with sunken nuclear-powered vessels and reactors, munitions armed with chemical substances, and canisters containing radioactive waste, raising them or neutralizing them, performing other technical submarine work, and developing the relevant technologies.

After solving the problem of the Komsomolets, the committee considers its priority tasks to be the elimination of the nuclear scrap heaps near Novaya Zemlya and deciding the fate of fascist Germany's chemical weapons which were dumped at the bottom of the Baltic Sea after World War II. For this it is proposed to pool the efforts of many departments, drawing on the vast scientific, technical, and industrial potential of Russia's military-industrial complex.

Replying to questions from ROSSIYSKAYA GAZETA's correspondent concerning the scale and cost of the planned work, Tengiz Borisov said:

"It is still too early to draw up the final balance sheet. Thorough expert study is needed. But such operations do not come cheap. For example, the preliminary project for raising the Komsomolets was estimated at \$170 million; then this figure rose to \$250-300 million; and to fully salvage the submarine would cost \$14 billion at 1991 prices. Of course, the country does not have such resources at the present time. The options we are studying now should stay within the limits of \$70-150 million. The program of raising and eliminating chemical munitions from the bottom of the Baltic Sea, which is expected to take 20-30 years, promises to be even more expensive. Here there is no getting by without international cooperation.

[Mozgovoy] *What are the prospects for such cooperation? Do you intend to collaborate with international ecological organizations?*

[Borisov] The Russian Government intends to put forward an initiative on forming an International Fund for Special-Purpose Underwater Works, and is ready to take on the organization of the matter. Ecologists are our allies. I have great respect for the activity of Greenpeace and other organizations. We will cooperate closely with them.

Navy Against Salvaging of Komsomolets Submarine

LD0102114593 Moscow *ITAR-TASS in English*
1035 GMT 1 Feb 93

[By ITAR-TASS correspondent Roman Zadunaitskiy]

[Text] Moscow, February 1 (TASS)—The Russian military believe it unnecessary to lift the nuclear submarine Komsomolets that sank in the Norwegian Sea in 1989.

Instead, Russian navy leaders suggest conducting regular inspections of the submarine and taking measures to prevent major radioactive leaks.

Valentin Lyashenko, head of the Russian Navy Department for the Exploitation of Nuclear Submarines, said the radiation level at the place where the submarine sank has not changed since the last inspection in 1991, while its nuclear plant poses no threat of explosion.

Scientists believe the leak of radioactive nuclides will not cause a serious radioactive contamination of the sea, Lyashenko said.

In addition, there are two cracks in the submarine's body which would also significantly hamper its lifting, Lyashenko said. If the Dutch consortium manages to lift the submarine, it may break apart because of the cracks. If not, its transportation, utilisation and burial will require too much expenses which are unlikely to justify, Lyashenko said.

No Plutonium Leaks Traced Near Sunken Komsomolets

PM0902162993 Moscow *KRASNAYA ZVEZDA*
in Russian 6 Feb 93 p 3

[Vladimir Gundarov report: "Radiation Normal in Northern Seas"]

[Text] No plutonium leaks have been detected in the area where the accident with the Komsomolets nuclear submarine occurred—this was stated at a meeting with journalists by Captain First Class Vladimir Vannovskiy, chief of the Northern Fleet Chemical Service. Traces of cesium-137 are to be found at natural background levels, and Vannovskiy attributed their appearance to the man-made [tekhnogennyy] background which has formed as a result of the prolonged use of nuclear powerplants in the North. Moreover, nuclear tests in the region's atmosphere and the dumping of radioactive waste at sea by Britain and France have made their "contribution." In other words, the cesium-137 in the sea does not yet constitute an environmental disaster.

Dangers of Kursk Industrial, Domestic Waste Dumping Cited

PM2001132593 Moscow *KOMSOMOLSKAYA PRAVDA*
in Russian 19 Jan 93 p 1

[N. Yefimovich: "Poisons in Kursk Soil"]

[Text] Kursk—The explosive situation in Kursk Oblast surrounding the burial of industrial and domestic waste could have unpredictable consequences. Seventy-eight percent of this waste is toxic. More than 100,000 tonnes of this poison accumulates per year. But virtually no waste dump meets health and epidemiological norms. Half of them actually arose spontaneously. Moreover, often next door to where people live. There is a total lack of any laboratory control over the disposal of harmful waste or the state of the subsoil waters around the dumping sites. The oblast administration's attempts to introduce at least some kind of order have so far had no success.

Barents, Kara Seas Radioactive Waste Burial Acknowledged

PM0902110993 Moscow *PRAVDA in Russian*
6 Feb 93 p 1

[Aleksy Boldinyuk report: "Where the Waste Is Buried"]

[Text] An international conference to study radioactive pollution in the Barents and Kara Seas is being held in the Norwegian capital. Representatives of 12 countries are participating in it, but, as was to be expected, attention is riveted on the delegate from Russia. He announced in Oslo

that 190,000 cubic meters of liquid radioactive waste was buried in the Barents Sea in 1959-1991. Furthermore, the Kara Sea has received 32,000 cubic meters of solid waste. The participants in the conference were, naturally, interested in the precise coordinates of the radioactive waste's disposal sites. The total number of these places in the two seas is 23, and the majority of them are far removed from the coastline. However, the conference participants did not succeed in obtaining this information.

Karelia Complains of Heightened Radiation

*LD1401215593 Moscow Radio Rossii Network
in Russian 0600 GMT 14 Jan 93*

[Text] The parliament of Karelia has submitted to the Ministry of the Protection of the Environment and Natural Resources of Russia a request for funds to be allocated for a radiological study. The need for this application, the news agency POSTFAKTUM reports, is called forth by the fact that last year an area of 50-70 sq km was discovered which had heightened concentrations of gamma rays. It is thought that this spot is either a consequence of the accident at Chernobyl or the result of other factors.

Karelian Lakes, Rivers in Need of Ecological Monitoring

*PM2501120793 Moscow IZVESTIYA in Russian
21 Jan 93 p 1*

[POSTFACTUM report: "Hardly Any Ecologically Pure Reservoirs Left in Karelia"]

[Text] There are approximately 70,000 lakes and 27,000 rivers in Karelia, and they all require thorough ecological monitoring.

Mikhail Feshchenko, minister of ecology of the Republic of Karelia, reported at a news conference that in 1992 ecological monitoring was being carried out at only 105 reservoirs in the republic. This program cost the republic 3 million rubles. This year considerably larger funds will be required, but this step should be taken because, according to the minister, there are now hardly any ecologically pure reservoirs left in Karelia.

Government Adopts Resolution To Restore Tula Ecology

*LD1701155893 Moscow ITAR-TASS in English
1533 GMT 17 Jan 93*

[By ITAR-TASS correspondent Valeriy Rudenko]

[Text] Tula, January 17 (TASS)—The Russian Government has adopted a resolution calling for urgent measures to restore the ecological balance in the Tula region, central Russia.

Work is now underway to draw up a comprehensive programme envisaging ecological safety of industrial zones in the region, structural reform of its economy, better health care and reproduction of resources.

The project also calls for international cooperation in rehabilitating industrial areas and regions affected by the Chernobyl nuclear power plant disaster. Local research

institutes are now holding negotiations with German, Dutch, Danish and other foreign nature conservation companies.

The programme is expected to be completed in February.

Ecological Emergency Likely To Be Declared in Nizhniy Tagil

*OW0802211893 Moscow INTERFAX in English
1856 GMT 8 Feb 93*

[Following item transmitted via KYODO]

[Text] The government of the Russian Federation has instructed the Environment and Natural Resources Ministry to finish in the first quarter of this year a government ecological inquiry into the condition of air in the city of Nizhniy Tagil (the Sverdlovsk region) and to draw up proposals for the likely declaration an ecological state of emergency there.

The resolution signed by Prime Minister Viktor Chernomyrdin says that it is necessary to take urgent measures to improve the ecological situation in Nizhniy Tagil and to stabilize the social-economic situation in the context of unsafe ecological conditions." [no opening quotation marks as received]

The city administration has been asked to ensure building a children's hospital for 350 beds. Fifty percent of the costs will be compensated for by the Russian Finance Ministry.

The Russian Federation's Committee for Defence Industries and the Economics and Finance Ministry, according to the resolution, are to provide for priority credits to those industries in Nizhniy Tagil which undergo the conversion of arms production.

Official Denies Stories of Veterinary Disease Epidemics

*PM2901151993 Moscow IZVESTIYA in Russian
28 Jan 93 p 2*

[Valeriy Konovalov report: "Our Livestock Raising Not Yet Threatened by African Swine Pest, Anthrax, or Foot-and-Mouth Disease"]

[Text] A big stir was caused by the POSTFACTUM item recently published in the press which reported that an anthrax epidemic had started among livestock in Omsk Oblast, that African swine pest [afrikanskaya chuma] is raging in Chelyabinsk and Tomsk Oblasts, and that foot-and-mouth disease is approaching Russia from Central Asia and Kazakhstan.

This report caused particular concern among foreign firms and organizations cooperating with Russians in the sphere of processing livestock products. Some major agreements and raw material deliveries were jeopardized.

"The information that appeared in the press about the danger of animal disease epidemics and about the death of livestock alleged to have already begun in connection with this are completely groundless," Oleg Iskhakov, Russian Federation chief state veterinary inspector, stated to us. "No cases of animals being infected by either anthrax or African swine pest have been recorded on Russian territory. In recent years the veterinary services have managed to maintain a favorable situation as regards foot-and-mouth disease too—there is currently no danger of an epidemic. We ascertained from the veterinary inspectorates of the republics of Central Asia and Kazakhstan

that no cases of foot-and-mouth disease have been registered on their territories either. So there was no reason to create panic.

Tyumen Oblast Oil Pipeline Accidents Reported

*PM2001102193 Moscow IZVESTIYA in Russian
19 Jan 93 p 2*

[Report by Yuriy Perepletkin: "Accident After Accident at Oil Pipelines"]

[Text] Tyumen Oblast—The past few days have brought considerable alarms and concerns to those engaged in West Siberia in eliminating accidents on main oil pipelines.

A wide-diameter pipe at the Nizhnevartovsk-Kurgan-Samara main oil pipeline burst 6 km from the rayon center of Uvat. Flames erupted. The fire destroyed expensive imported equipment—an excavator and pipe layer—and parts of the forest suffered. Two days had to be spent putting out the fire and getting rid of the fuel left behind. And about 2,500 tonnes had poured from the pipe. Fortunately, if that word is appropriate here, the oil did not flow into the Irtysh, which flows nearby, and there were no human casualties.

Passions around this event had not had time to die down before a new accident occurred. Northwest of Nizhnevartovsk, 25 km from the city, an oil gathering main broke. This happened on the night of 14-15 January. And again there was a fire which, with considerable effort, was put out by morning. On Saturday the emergency rescue teams had repaired the gathering main and it seemed possible to restart the boreholes which had been brought to a standstill—because of the accident over 50 of them had been standing idle. Alas, it emerged that a water pipeline had frozen and 25 meters of pipe running under a concrete road in the frozen topsoil had to be replaced. This operation took 40 men yet another day.

On Monday 18 January all Nizhnevartovskiy Rayon's oil gathering networks were operating normally. But the economy and ecology had suffered losses. Who will be responsible?

The investigation is continuing. And while in Uvat a specific culprit will most likely be identified—obviously the mainline was damaged with a bulldozer by a machine operator from a pipe laying subdivision—in Nizhnevartovsk there will be no one to hold responsible. F. Gabitova, chief of the rayon department for emergency situations, told your IZVESTIYA correspondent that the reason for the accident was metal "fatigue." The pipes of the oilfield gathering systems here became obsolete long ago and are due to be replaced. This is a very acute problem for the entire oil-bearing Ob region but major funds are needed to resolve it. So far there is no success in finding them, so there are no guarantees that another accident will not occur tomorrow.

People's Deputy Urges Government To Protect Lake Baykal

*LD1801111293 Moscow ITAR-TASS in English
0946 GMT 18 Jan 93*

[By ITAR-TASS correspondent Vladimir Khodiy]

[Text] Irkutsk, January 18 (TASS)—Russia People's Deputy Igor Shirobokov, a president's representative, and chairman of Irkutsk regional council of people's deputies, Viktor Ignatenko, signed an open letter addressed to the highest Russian authorities appealing to them to make an addendum to the recently adopted resolution on the Lake Baykal setting the deadline for the production of cellulose on the lake shores.

Resolution No. 925 dated December 2, 1992 deals with the conversion of the Baykal cellulose plant. However, the resolution contains no mention of eliminating the main source of pollution of the lake—the chemical processing of timber.

According to the letter it is regrettable that Russia cannot wisely and carefully manage its world's greatest resources. The Lake Baykal contains 20 percent of fresh and almost 890 [number as received] percent of pure drinking water. Instead of boosting tourism and recreation facilities in the unique corner of our planet we let it be contaminated by harmful industrial discharge, the letter said.

It is surprising that the discussion of a draft law on the protection of the Lake Baykal is being delayed, which should determine once and for all what activities are inadmissible there.

Local Authorities Seek To End Pollution From Baykal Plant

*PM2801162793 Moscow ROSSIYSKAYA GAZETA
in Russian 27 Jan 93 First Edition p 1*

[ROSSIYSKAYA GAZETA-ITAR-TASS report under "Yesterday, Today, Tomorrow" rubric: "Baykal Pulp and Paper Combine Continues To Make Pulp"]

[Text] The Irkutsk Oblast authorities have taken over responsibility for converting the Baykal Pulp and Paper Combine.

This was the decision reached by the Irkutsk Oblast soviet, which again discussed the situation concerning Baykal. Because the pollution of the unique lake by the ecologically harmful production facility's waste is continuing. Under earlier decrees by the Union and Russian Governments, the chemical processing of timber on Baykal's shore was scheduled to end by 1 January 1993. However, the scheduled deadline has passed but people have simply not set about solving the problem.

Irkutsk inhabitants have devised their own action program. The priority measures include transferring the combine from federal to oblast ownership and holding an international competition for the best project that excludes the making of pulp.

Russian-American Ecological Project for Ussuri River in Far East

*LD2701104293 Moscow ITAR-TASS in English
1004 GMT 27 Jan 93*

[By ITAR-TASS correspondent Yuriy Vitrishchak]

[Text] Khabarovsk, January 27 (TASS)—Principles used during the working out of the unique Russian-American project, aimed at maintaining ecological balance around

Lake Baykal, could be applied to the basin of the Ussuri river in the far east. The Far Eastern Institute of Ecological and Water Problems received from the Russian-American Initiative Centre a proposal on the joint development of the programme of a rational use of natural resources in that area.

According to George Davis, head of the project, they have already enlisted the support of local authorities of the Khabarovsk region and of the adjacent Chinese province of Heilongjiang. They are going to make a special map and a list of recommendations on the economic development of the region.

WESTERN REGION

Belarus: Chernobyl Committee Adopts Budget, Priorities

WS2001133593 Minsk BELINFORM in Russian
0956 GMT 16 Jan 93

[BELINFORM report: "No One Can Economize on Disaster"]

[Text] The meeting of the Supreme Council Committee for the Chernobyl Disaster has considered one chapter of the government economic program for 1993 presented by the State Chernobyl Committee.

The Supreme Council Press Bureau informs that the committee approved of the chapter with a budget of 165.2 billion rubles (at prices predicted in 1993) and capital investments of 99.4 billion rubles to overcome the consequences of the disaster.

The resolution affirms the inadmissibility reducing capital investments compared with those provided for in the state program for overcoming the effects of the disaster in 1990-1995, adopted by the Supreme Council, or reducing the funds allotted for the implementation of respective Belarusian laws and programs.

It was recommended that the Council of Ministers finance the capital investments in construction using funds from the state budget, and other expenses, using funds from the Chernobyl emergency tax. The government priorities should be financial support for the development of the country's health facilities, the construction of factories processing baby food and pharmaceutical enterprises; the construction of housing, social, and cultural centers; the production of building materials; and ensuring the effectiveness of measures for the social security of those citizens who have been affected by the disaster.

Ukraine: Chernobyl AES Manager Refutes Allegations

WS2501133493 Kiev KHRESHCHATYK in Ukrainian
25 Dec 92 p 4

[Article by M. Sorokin, general manager of Chernobyl Nuclear Electric Power Station (AES): "What Color Is the Truth?"]

[Text] For the sake of the truth we will not spare our newspaper space and we will clarify some basic issues (we are quoting the facts from the "greens" address and counter arguments by the Chernobyl AES manager).

Authors of the address: "The accident at reactor No. 2 developed almost according to the same plan as that of reactor No. 4 and could have led to a new global disaster. But, as the Zelenyy Svit [Green World Ecological Association] specialists and observers report, no conclusions were reached and no measures taken to prevent a similar accident in the future.

Sorokin: Based on the results of the investigation of the cause of the 11 October 1992 accident, 22 organizational and technical measures were taken, aimed at improving the security of Chernobyl AES reactors.

Authors of the address: "In the center of the reactor there is a faulty sector which results in the uneven distribution of the neutrons and may lead to their 'splash'".

Sorokin: Indeed, in the reactor of block No. 1, there is an area (five channels out of 1,693) in which no cool gas duct can be installed. But anyone who knows how the RBMK-10 reactor is built will understand that talking about a neutron splash in this area is absurd.

Authors of the address: "As we know, the Chernobyl AES is being operated on shifts. Specialists come for two weeks and then have two weeks off."

Sorokin: The shift method was canceled beginning 1 October 1988 (order No. 327 dated 15 April 1988).

Authors of the address: "Shift workers come from different places, even the Crimea."

Sorokin: The satellite town of Slavutych was built to ensure the normal maintenance of the Chernobyl AES, and all the station personnel live there. Shift workers operate enterprises in the 30 kilometer zone and not the station.

Authors of the address: "The economic advantage from running the reactors is rather doubtful..."

Sorokin: Our 1990 income permitted us to transfer 1767.9 million rubles [R] into Ukraine's budget. The sale price (tariff) of electric power is R1.26 for nuclear power stations and R3.2 for thermal power plants. It means that each idle day at the Chernobyl AES causes R79,152 million of financial loss due to the price difference alone.

Authors of the address: "The power plant's personnel are not interested in the equipment's reliability and the acceleration of the repairs."

Sorokin: The AES is an unsubsidized enterprise. Thus the personnel's wages depend directly on the volume of electric power produced every month.

Authors of the address: "...leakage, which now reaches 5,000 curies a day."

Sorokin: The RBMK-1000 daily leakage norm is 500 curies. In October, average leakage was 130 curies a day for reactor No. 3; maximum leakage was 214 curies a day. In November these figures were 239 and 330, respectively.

These by far are not all the positions in which there are discrepancies, to put it mildly.

In general, many publications about Chernobyl carry partial information. After reading them one may get an impression that the station personnel consist of robots programmed to commit nuclear crimes. Moreover, these

robots have a strong desire to provoke a new nuclear explosion and launch into eternity themselves, their children living in Slavutych, and the station.

The fate of Chernobyl nuclear specialists is not easy, indeed. Do you remember how pompously it was launched ahead of schedule. Now in the same manner, ahead of schedule, the public is demanding that it be shut down. Moreover, the people whose fingers rest on the nuclear buttons are intimidated. Who wants these fingers to tremble?

Working with the atom requires an immense personal and collective discipline. According to the norms, a fundamental project should be ready at least five years before the final shut-down of a nuclear power plant. Chernobyl specialists have no time for this. The preparation for the shut down and the elaboration of the project are under way simultaneously. I am sure we will be technically ready for the shut-down scheduled by the Supreme Soviet for the next year. The tempo of life and work is very intensive in Chernobyl. This is why nuclear specialists receive all the ungrounded allegations, like those by the "greens", with bitterness. Let us recall the phrase about the 1991 accident developing according to the same plan as the accident in reactor No. 4. The very word "plan" presupposes that there was also an author whose actions were aimed at causing an accident.

Let us not forget that all the station personnel suffered from the 1986 accident. Among these people, 500 participated in the liquidation of the aftermath right after the explosion. And this should be borne in mind—there will be no replacement for these people. Is it wise to rock the boat which is heading for the shore slowly but steadily? Do the station personnel deserve to be treated without respect? I am sure they do not, the more so that apart from the technical measures directed at the implementation of the Supreme Soviet resolution, these people are constantly working on the enhancement of the station's security. At an IAEA [International Atomic Energy Authority] conference in Vienna, these measures were called "large scale and competent". Such a scrupulous care for the station's technical state even caused alarm among atomic experts: "Are they really planning to shut it down?" It was not difficult to persuade professionals; it is a whole lot harder with the "greens".

The future is holding some real ordeals in store for us. The decision of the Ukrainian legislature was adopted in the times of the USSR. We had hoped that Moscow would help us with money and equipment and it would not be very difficult to cope with the economic aftermath of the station's shut-down. Now the situation has abruptly changed. After the power plant is shut down, Ukraine will be losing \$600 million a year. Instead of producing electric power, the dead station will become its consumer. Besides, other nuclear electric power stations cooled by Dnieper waters will remain active.

There are attempts to change the situation for the better. For example the "Arma" enterprise was opened in Kiev to compensate for the lack of foreign technical equipment shipments for the needs of the Chernobyl AES. It has even started exporting its production. I once thought that Ukraine would not be able to do without Russia's help. But

time, short yet abundant in events, has diametrically changed my views on this issue.

Not long ago, newspapers carried scandalous reports about the international competition for the best project of the sarcophagus reconstruction, and mildly speaking, dubious actions of the management of the "Ukraine—Chernobyl" fund. Although the newspapers do not directly mention the power plant personnel, we have become used to the fact that all negative information has a negative effect on the reputation of our staff.

I do not want to be partial and create an impression that our specialists work in a vacuum. A State Committee for Atomic Energy has been founded, we have good relations with the appropriate Supreme Soviet commission. Its chairman, Volodymyr Yavorivskyy, never turned his back on our problems. But still....

So what color is the truth about Chernobyl: white, black, or green? We would like to make this clear at routine meetings of people advocating different views and stances. By means of KHRESHCHATYK, I want to invite all those who strive for impartiality to keep in touch with us at least by telephone. It is impossible to write about the AES and to stay away from the problems of its personnel. This may only lead to new misunderstanding, and the intimidation of the people linked with Chernobyl by the chain of uncertainty about the future.

Ukraine: Scientists Justify Activating Second Unit at Power Plant

AU2001100293 Kiev HOLOS UKRAYINY in Ukrainian 14 Jan 93 p 4

[Unattributed commentary: "The Activating of the Second Power Unit at the Khmelnytsky Atomic Electric Power Plant Is Quite Possible"]

[Text] Following the completion of the extradepartmental ecological examination at the Khmelnytsky Atomic Electric Power Plant, leading scientists presided over by Academician D. Hrodzyskyy, chairman of the Supreme Council Commission for Radiation Protection of the Population, believe that the activation of the second power unit at the Khmelnytsky Atomic Electric Power Plant is quite possible.

As is known, in April 1990, the session of the Khmelnytsky Oblast Council of People's Deputies established a moratorium on the construction of new power units at the Khmelnytsky Atomic Electric Power Plant and demanded that the executive organs carry out an independent ecological examination. D. Hrodzyskyy reported to the deputies about the results of the examination. It was pointed out, in particular, that the reactor type VVER-1000 that is being used at the first power unit is much more reliable than the RBMK [channel-type, graphite-moderated] reactors installed in Chernobyl. In the academician's opinion, the activation of the second power unit will not complicate the existing ecological situation in the zone of the atomic electric power plant.

Ukraine: Chernobyl Fire Will Not Curb Use of Nuclear Power

93WN0259B Moscow KOMMERSANT-DAILY
in Russian 14 Jan 93 p 17

[Article by German Zaychenko: "The Fire at the Chernobyl AES: The Fire Has Been Put Out, Safety Problem Remains"]

[Text] Late Tuesday evening, there was a flare-up in one of the auxiliary buildings at the Chernobyl AES [nuclear electric power station]. Official sources announced on Wednesday that no rise in the level of radiation had been noted, and there were no casualties. The occurrence was judged to be at the "zero" level, according to the international IAEA [International Atomic Energy Authority] seven-level scale for evaluating the danger of nuclear accidents. Nevertheless, unlike the calm official commentaries, independent experts foresee an increase in the number of accidents at another level of danger on the territory of the former USSR.

The signal for heavy smoke in the building, which is located between the first and second energy blocks, was received by the shift leader at 23:54 Moscow time. The flare-up occurred in the electrical block that feeds the portable electrical instruments. Oleg Goleskokov, a worker at the plant, announced that the plant's employees, protected by gas masks, had taken care of the fire in an hour's time. According to preliminary information, the flare-up was caused when thawing water dripping from the roof fell on a high-tension cable that was attached to a metal box.

Viktor Borisenko, head of the plant's technical staff, assures us that what happened had nothing to do with the nuclear reactors. The level of radiation was not measured. Safety regulations were not violated. There was no danger to the first energy block, which is located in a separate building 30 meters away. The two Chernobyl reactors that are in use until the plant is closed down completely next year continue to operate normally.

Despite the fact that the information about the safety situation at the Chernobyl AES was broadcast on Ukrainian television, the population's attitude towards the announcement was distrustful. Public opinion is negative towards the use of nuclear plants. The reason for this is the catastrophe that occurred seven years ago, when, as a result of the explosion of the fourth reactor at the Chernobyl AES in April, 1986, about eight thousand people died (according to official data), and thousands of square kilometers of land were contaminated.

[Boxed item]

"Greenpeace of Russia": Number of Accidents Will Grow

According to official information, in 1992 over 100 incidents caused by interruptions in the operation of the five Ukrainian nuclear power plants. Approximately the same number were registered the year before last. However, an improvement in the situation is noted at the Chernobyl AES—mainly due to the fact that all four of its reactors were closed for most of the year. The biggest incident at the Chernobyl AES after 1986 was a large fire in 1991, which led to the shutting down of the second energy block, and has not yet been put out. So far today, only one nuclear power

plant in Eastern Europe—the Rovenskaya plant (West Ukraine)—has received IAEA approval for safety procedures.

According to data from Dmitriy Tolmatskiy, coordinator of "Greenpeace Russia's" anti-nuclear campaigns, every year the number of accidents at CIS nuclear power plants will increase because the operating reactors are getting older, and new ones are being fitted out using obsolete technology. In Mr. Tolmatskiy's words, there were 204 irregular situations at Russian AES in 1992, while in 1991—there were only 141, and on the entire territory of the CIS—187.

[End box]

The Ukrainian leadership states that, despite the public's extremely negative reaction, Ukraine intends, in the future, as well, to satisfy the greater portion of its energy demands using nuclear power plants. At present, they provide one-third of the republic's needs for electrical energy, and in winter, even up to 40 percent. All the same, official representatives admit that the problem of safety remains a real one for the five nuclear plants located on Ukrainian territory. The Russian parliament has spoken in favor of completely closing the Chernobyl AES in 1993. For now, two of its reactors are operating to fulfill Ukraine's energy needs.

Ukraine: Commission Investigates Chernobyl 12, 14 January Accidents

WS2501134193 Kiev KHRESHCHATYK in Ukrainian
19 Jan 93 p 2

[Report by UKRINFORM correspondent Valentyn Vernodubenko: "The End Has Come Closer"]

[Text] As we have already reported, on 12 and 14 January two accidents occurred at the Chernobyl Nuclear Electric Power Plant [AES]. The first was a fire in an auxiliary fuse box, the second—the ignition of a wooden construction, left after the elimination of the 1986 accident aftermath in the ventilation duct of the "Shelter". On 14 January, members of the Supreme Soviet Commission for the Chernobyl Accident visited the AES. The UKRINFORM correspondent asked Commission Head Volodymyr Yavorivskyy to evaluate the events.

Volodymyr Yavorivskyy emphasized: "The cause of the second accident is still unknown, but at any nuclear power plant in the world such accidents are treated as routine technical incidents." The manager of the AES said: "Similar incidents take place almost every month at other power plants, but they do not stir such emotions." But it is quite different in the case of the Chernobyl AES, which may be called a dangerous animal, gravely wounded, but still alive. Besides, Kiev, with a population of 3 million, is only 140 kilometers away; and it witnessed the nightmare of 1986.

Even the smallest accident at the Chernobyl AES reverberates in Kiev. V. Yavorivskyy pointed out: "The commission arrived in Chernobyl to see everything with our own eyes. I am an opponent of nuclear energy production in the form now existing in Ukraine and the former USSR, but in this case, I will risk taking up the mission of reassuring the public opinion. Yet, on the other hand, as a politician, I must take into consideration the people's moods. I told the

power plant management that even these petty incidents had brought the end of the Chernobyl AES closer.

According to the Supreme Soviet decision, the power plant must be shut down at the end of 1993. This is a law, and it must be carried out. We have been informed about the preparation for the closure of the Chernobyl AES and I want to say that the two incidents accelerated this process."

Speaking about the 14 January fire, V. Yavorivskyy said: "The fire broke out in an unattended location far from the buried reactor No.4, the technological systems, and sensors. Wooden props previously used for supporting constructions caught fire. I want to emphasize, that the fire did no harm to the sarcophagus itself. At the same time, this is one of the most dangerous objects in Ukraine. I want to remind you that Ukraine has launched an international competition for the transformation of the "Shelter" into an ecologically safe system.

The results of the competition will be known by 26 April. A couple of days ago, Vice Prime Minister Ioffe sent a letter of thanks to the French Government for financing measures for the sarcophagus transformation. We have reliable information that German, American, English, and French companies will participate in the competition. I cannot say that the latest incidents have aggravated the situation around the sarcophagus. Their meaning is rather psychological; and they prove the correctness of our commission's course."

Ukraine: Ecologists Oppose Gorbachev Election to Green Cross

*OW2001144993 Moscow INTERFAX in English
1318 GMT 20 Jan 93*

[Following item transmitted via KYODO]

[Text] Ukraine's ecological organizations, Greenpeace and the Green Party, have protested against Mikhail Gorbachev's possible election as president of Green Cross, an international ecological organization.

In a joint statement published on Tuesday, the two organizations say Green Cross cannot be headed by a person who, while leader of the Soviet Union, "did his best to conceal the actual scale of the world's largest technological catastrophe, the one that was set off by the accident at the Chernobyl Nuclear Power Plant and brought so much suffering to the peoples of Ukraine, Russia, and Belarus."

Ukraine: Progress Update on Contest To Save Chernobyl

*WS0802104293 Kiev KHRESHCHATYK in Ukrainian
23 Jan 93 p 3*

[Article by Heorhiy Hotovchyts, Ukrainian minister for protection of the population from the aftermath of Chernobyl: "What Is the Fate of the 'Shelter?'"]

[Text] Considering the great public interest in the international competition on the best project for the transformation of the Chernobyl nuclear electric power plant into an ecologically safe system, announced by the Ukrainian Government, the organization committee has decided to

inform the public about its progress. The more so that lately different opinions have been expressed about this undertaking.

Both the organization committee and the institutions in charge of the competition—the Minchernobyl, the Ukrainian Academy of Sciences, along with the Ukrainian Branch of the International Center of Scientific Culture, consider that there are grounds to hope that the announced competition of ideas will be a success. The committee has received 359 applications, among them more than 30 from companies and private persons from the United States, England, France, Germany, Austria, Canada, Italy, and other countries. The participants received all the necessary documents.

In light of the numerous requests from the competitors, the Ukrainian Government has agreed to prolong the competition until 26 April 1993. This should bring in more applications from different countries and improve the quality of the projects. In our opinion, the December 1992 presentation of the competition in the United States State Department, attended by 24 American companies, will draw in more participants.

Preparations are under way to submit 229 projects for experts' consideration. At the same time, we are trying to include foreign professionals on the jury. Specialists from the United States and Belgium have already expressed their consent.

The organization committee considers that the contract between the Ukratomenerhoprom and the international corporation Shelter Universal, whose components are the French Buig and the Interbranch Scientific-Technical Center "Shelter," violates the statute of the contest. Persons involved in the signing of the contract have been removed from the jury. What concerns the Buig it is one of many competitors and its project will be considered on general grounds. This is our stance, and it is supported by the Ukrainian Government.

The organization committee has again emphasized that all the competitors have been enjoying equal rights and absolute objectivity. The problem of the elimination of the threat presented by the shelter is unique and complex. Its solution requires a mobilization of the world scientific and technical potential, the choice of the best projects and ideas. People say: "Two heads are better than one."

On behalf of the committee, I want to express hope that foreign governments will assist their national firms, scientific, and business circles willing to participate in the competition to solve the issue of the destroyed Chernobyl reactor.

Ukraine: Rivne Atomic Power Plant Introduces Innovations

*AU3101144693 Kiev MOLOD UKRAYINY
in Ukrainian 26 Jan 93 p 2*

[Report by Viktor Mazanyy from the "Rivne Atomic Electric Power Plant: Chronicle of Events"]

[Text] **Check Yourself**

Technicians and senior employees at the Atomic Electric Power Plant [AES] will not be able to start operational

work unless they pass, once a year, a course of examinations at the laboratory for psychological and physiological protection. The medical specialists will establish the degree of every employee's readiness for actions in the conditions of considerable nervous pressure and high personal responsibility. The employees of the plant's new subdivision make their conclusions on the basis of experiments in the course of which the characteristics of the patient's memory, emotional stability, and ability to make fast decisions are determined. Information will also be obtained during the use of nontraditional methods—iridodiagnostics [irydodiahnostyka], biological tracing [biolokatsiya], reflex therapy [refleksoterapiya], and acupuncture. Similar procedures will also be used to examine prospective new employees. According to the specialists operating the AES, the laboratory's recommendations stimulate the personnel's self-training and self-control.

The First Hundred....

Since its commissioning, the AES has produced 100 billion kilowatt-hours of electric energy. As estimated by specialists, such an amount of electric energy may be obtained from 41 million tonnes of Donbass coal or 25 million tonnes of fuel oil. If a thermal power plant of the same capacity had used these types of fuel, then, over 12 years of its existence, 8 million tonnes of cinders and slag would have fallen on the territory of Volodymyrsky Rayon where the plant is situated....

"Shchedryk"—For Your Health

The extract of propolis [bee glue] forms the nucleus of the "Shchedryk" tablets that began to be produced at... the Rivne AES. The preparation elaborated by Lyudmyla Porokhnyak, professor at the Kharkiv Pharmaceutical Institute, promotes the evacuation of radioactive nuclides from the human organism and has a favorable effect upon the organism's immunological condition. These properties of the sweet granules have been confirmed by numerous experiments, including those in the village of Berezyno in Volodymyrsky Rayon whose residents were the first to have experienced the toning up action of the tablet. Ukraine's Scientific Research Institute of Dietary Hygiene recommends this innovation for treatment and as a preventive measure for children and adults.

"Shchedryk" is manufactured at the conveyor line assembled by specialists of the AES on the territory of the plant. The raw materials (these are products of apiculture, treacle, and sugar) are supplied from ecologically clean regions of Ukraine.

The unusual product is primarily sent to residents of rayons that were contaminated with radioactivity as a result of the Chernobyl accident.

Ukraine: Officials Search Chernobyl Area for Contaminated Poppies

AU0902152593 Kiev DEMOKRATYCHNA UKRAYINA in Ukrainian 3 Feb 93 p 6

[Article by Olena Chukayeva and Ivan Shulha, officers at Ukraine's Ministry of Internal Affairs Criminal Investigations Department: "Drug Addict—This Sounds Alarming"]

[Text] Ukraine is increasingly becoming a raw materials base used for the production of narcotics. It is precisely from here that narcotic substances in the form of poppyheads find their way across Ukraine's borders. KOMMER-SANT (No. 14) and INTERNATIONAL HERALD TRIBUNE wrote that a private Moscow group of the "International Association for Combating Drug Trafficking and Abuse" was alarmed when two years ago, poppies and hemp that are raw materials for manufacturing narcotics had been sown in an unpopulated location contaminated with radioactive nuclides. These data were also corroborated by a French group that is gathering information on the movement of illegal narcotic cargo throughout the world. According to the members of the group, the size of the poppyheads was twice that of normal.

Even though representatives of the program for the control over narcotics replied that they did not possess such information, a group of officials from Ukraine's Ministry of Internal Affairs had to fly over the territory of the Chernobyl Atomic Electric Power Plant in a helicopter and examine a whole series of villages, among which an area as large as four square meters sown with opium poppies was found in only one village of Stechentsi. No poppyheads as big as an apple could be found there. As we can see, unfortunately, journalists sometimes fabricate things.

It is true, though, that the problem of drug abuse in Ukraine is becoming increasingly acute from year to year. Today, more than 32,000 consumers of narcotics, among them 24,500 diagnosed as drug addicts, have been registered by internal affairs bodies. It is disturbing that 90 percent of them are young people aged up to 30 years of whom 50 percent have been using narcotics since their teens.

In just two years, 508 registered drug addicts have died. Last year, in particular, 188 such cases were recorded.

According to the data of the V. Protopov Kharkiv Scientific Research Institute of Neurology and Psychiatry, in his short life, a "long-term" drug addict recruits up to 200 persons to assist him in illegal operations involving narcotics. Alarmed by the sharp increase in drug abuse and crimes committed under the influence of narcotics, internal affairs officials have demanded that decisive measures be taken against this evil. "The Law on Banning the Sowing of Poppies" adopted as far back as in 1978, was the result. It considerably blunted the acuteness of the problem. In particular, the level of crime associated with drug abuse decreased. Although there were complaints against this law, the need for issuing it was beyond doubt.

"What about traditional poppy pies?" cried worried owners of poppy crops. The law does not forbid cultivating poppies, provided that reliable protection from the lovers of the "herb" is organized or that two or three oblasts are designated for growing this crop.

It is true that Ukraine's considerable raw materials contribute to the process of spreading drugs. More than 85 percent of drug addicts use narcotics in the form of poppy straw; over ten months of the last year, the activity of organized criminal groups was halted and more than five

tonnes of raw materials used for the production of narcotics was confiscated; over the last two years, more than 2,000 drug traffickers—procurers of poppy straw—have been detained.

Our contacts with the leadership of state agencies of foreign countries that are in charge of combating drug abuse and control over the use of narcotic substances are increasingly intensifying. Measures are being taken to close the channels and sources of drug supplies and drug trafficking with the help of chemical laboratories at airports, inspection stations in customs houses with specially trained dogs, and control and road blocking militia posts in borderland oblasts.

However, the actions of individual institutions and departments in this sphere are not concerted. Life demands that a single coordination center be created in Ukraine and that a national program be adopted to take the struggle against drug abuse nationwide.

Ukraine: Nuclear Waste Problem May Force Closure of 3 Reactors

*OW0802123993 Moscow INTERFAX in English
1153 GMT 8 Feb 93*

[Following item transmitted via KYODO]

[Text] If the question of dumping nuclear wastes is not decided soon it is possible that at least three reactors with 1 million kwts each of the 13 functioning reactors will be shut down.

On Monday at the Zaporozh atomic energy station the directors of Ukrainian atomic power stations, representatives of the governments of Russia and Ukraine and the Krasnoyarsk mining and chemical industry will discuss the resumption of dumping nuclear waste from Ukrainian atomic energy stations in Krasnoyarsk.

After Russia adopted the law banning export of radioactive waste to its territory, Ukraine is faced with the acute problem of the utilization of nuclear waste. Her own dumps are already full.

CAUCASUS/CENTRAL ASIA

Armenia: 'Enforced' Recommissioning of Armenian AES Seen

*PM2201153593 Moscow ROSSIYSKAYA GAZETA
in Russian 21 Jan 93 First Edition p 7*

[Karen Topchyan report: "There Are No Guarantees, but We Cannot Survive Without AES"]

[Text] Yerevan—In February 1989 a nuclear electric power station [AES] located several dozen kilometers from Yerevan was closed by decision of the Armenian parliament. At that time this step was explained by enforced circumstances: Two months earlier, in December 1988, the Spitak earthquake had taken place. And although nothing

serious had happened to the Armenian AES, no one could guarantee that it would be able to withstand any more cataclysms of nature.

Today Armenia is also faced with an enforced step—to recommission the AES. The country is faced with the real threat of an energy disaster because it does not have an adequate energy source base of its own, and because it is impossible to import fuel from abroad. There is no point in relying on imported fuel since no end is in sight to Azerbaijan's blockade of roads and railroads. And the Georgian-Abkhazian conflict has led to the complete stoppage of land links between Armenia and the outside world.

In a conversation with me, Eduard Arzumanyan, Armenian deputy minister for energy and fuel, noted: "Naturally, when it decides to commission the AES, Armenia will not ask for permission from neighboring states. The only legal consideration is presented by the Paris and Vienna Conventions adopted within the framework of the International Atomic Energy Agency in 1960 and 1963 respectively on third-country liability in the sphere of nuclear energy and on civil liability for nuclear damage. Furthermore, Iran and Turkey are planning to construct and operate nuclear power stations themselves (two power units with a total capacity of 2,392 megawatts are being constructed in the former, and in Turkey two research reactors are in operation). As for Georgia and Azerbaijan, these countries have already voiced their alarm about the probable commissioning of the Armenian AES. But we are being forced to reactivate it because, aside from anything else, there is a great probability that the blockade will continue.

Armenia: IAEA Official Views Safety Regime at Yerevan Nuclear Station

*LD2901201993 Moscow ITAR-TASS in English
1723 GMT 29 Jan 93*

[By ITAR-TASS correspondent Yuriy Kozlov]

[Text] Vienna, January 29 (TASS)—Electricity supply irregularities of the safety system of the Armenian nuclear power plant located near Yerevan are not fraught with a threat of a major radiation catastrophe, official representative of the International Atomic Energy Agency (IAEA) Hans Mayer said here today.

A real threat to the plant life-sustenance system may appear, in his opinion, two or three weeks later, if the problem of fuel supply, necessary for the operation of generators feeding electric pumps of the nuclear reactor water cooling system, is not solved by that time.

Mayer recalled last summer IAEA Director-General Hans Blix sent a letter to Armenia to express concern over the technical state of the nuclear power plant and offered assistance to eliminate the drawbacks. There was no response to the letter.

True, the Armenian government turned for international help to overcome the difficulties caused by the upkeep of the proper safety regime at the nuclear power plant. However, the appeal was sent to the United Nations, instead of the IAEA.

Armenia: Minister Warns of Impending Environmental Disasters

*LD3101192393 Moscow ITAR-TASS in English
1912 GMT 31 Jan 93*

[By ITAR-TASS correspondent Tigran Liloyan]

[Text] Yerevan, January 31 (TASS)—“As a result of the undeclared war waged against Armenia, the republic has been turned into an ecological disaster zone, and the continuing power blockade of Armenia is fraught with further worsening of the ecological, sanitary and epidemiological situation not only in the republic itself but also in the entire Transcaucasia,” the Armenian Minister of the Environment Karine Danilyan said in an appeal she has addressed to heads of government and ministers of the environment in a series of foreign countries, international and national ecological organisations and movements.

The situation is further complicated by the possibility of restarting the Armenian nuclear power station, which “will have global consequences”.

The aggravation of the crisis in the past few days has further cut hopes for the safe operation of this nuclear power station, the minister said. She called on her colleagues to make every effort to “remove the blockade of the republic”.

Georgia: Commission To Evaluate Ecological Damage by Russian Troops

*LD2701114293 Tbilisi CONTACT INFORMATION
AGENCY in Russian 1727 GMT 26 Jan 93*

[Text] The Georgian Cabinet of Ministers has decided to set up a government commission that will determine the dimensions of the ecological damage inflicted on Georgia by troops of the former Soviet Union and of the Russian Federation. The composition of the commission has been approved under the leadership of Deputy Prime Minister A. Margiani.

Kazakhstan: Activists Uncover Chemical Waste Canal at Azgir Test Range

*93WN0258B Moscow NAZAVISIMA GAZETA
in Russian 19 Jan 93 p 1*

[Article by Sergey Kozlov under the “Ecology” rubric: “Kazakhstan’s Nuclear Surprises—The Republic Is Turning Into a Radioactive Dump”]

[Text] According to data from activists of the international nuclear movement Nevada-Semipalatinsk, 22 test ranges are located in Kazakhstan. As of today, 13 of them have been declassified. The very process of declassification takes place in rather peculiar fashion. From time to time, sensational facts “surface” on the testing of a nuclear or other type of weapon, puzzling consequences are uncovered, and, as a rule, the appropriate departments react to these finds quite guardedly and condescendingly—most often there follows an ironic reply “to journalists looking to smell a rat where there is none.”

Strange as it may seem, they are already apparently accustomed in Kazakhstan to disclosures of crimes committed by the military-scientific machine against nature and man. For

example, there was practically no reaction following discovery of the Azgir test range in Atyrau Oblast—code named “Southern Seismic Expedition.” As it turns out, the “seismologists” from the city of Arzamas-16 conducted at least 17 nuclear bursts here since the middle of the 1960’s. Work is currently under way to bury contaminated soil. In the areas where the testing took place, nuclear sites are practically unfenced and lack security. There is no transportation decontamination station. The soil is not buried and is picked up by the wheels of vehicles and spread throughout the district. All this was witnessed by activists of Nevada-Semipalatinsk who investigated the test sites. The variation in gamma background in the area of the range shows that radioactive patches still remain (for example, in the mine where range authorities assert that everything is deactivated, two patches were discovered). Dosimeters indicated from 9,000 to 25,000 microroentgens per hour. In addition, the activists who visited Azgir discovered yet another semilegendary object—a canal constructed in this region from Volgograd Oblast. As Professor Aytkozha Bigaliyev, member of the Nevada-Semipalatinsk leadership, tells it: “We drove several dozen kilometers along this canal. Its width was 10-12 meters, depth—about 3-4 meters. It begins in Volgograd Oblast, where, as we know, many enterprises are located which have harmful production output. The canal extends more than 1,500 km, and goes to the Naryn Sands. If they begin discharging chemical waste here—ecological catastrophe is inevitable. The Naryn Reserve will perish. At a depth of a meter and a half under the sands is fresh water, thanks to which an oasis has developed in the desert. Previously, the reserve comprised 157,000 sq. km in area. With the opening of the range it was reduced to 16,000. Rare forests restrain the forward movement of the sands. If the discharge takes place, the trees will die off in one, or at most two years. The sands will move forward and join the sands of the Aral.”

At what stage are the efforts to complete the canal? It is practically finished, the witnesses noted. When they were in the area, some 30 km remained to be dug. The work pace has quickened. The builders understand that they must hurry while they still have the consent of local authorities. When the canal is completed, discharging the chemical filth will be a matter of just a few days, after which neither society nor the Nevada-Semipalatinsk activists will be able to eliminate the consequences.

Why did local authorities give their consent? The activists believe this consent was obtained in exchange for a promise to lay in gas and electricity here.

The area of the Azgir range—Naryn Sands has also become the place over which they shoot down missiles launched from the range at Kapustin Yar—to include missiles with nuclear warheads. Bigaliyev states: “We drove about 160 kilometers in one direction and the same distance in the other, along Narynkum (Naryn Sands). There are missile fragments everywhere. You see them every three or four kilometers.” The local inhabitants take these fragments for their own use. When a fuel compartment is preserved, they take the fuel out of it and pour it into their kerosene stoves. They say it burns well. They do not know that the most horrible poison is being released when they do this—dioxin.”

Still another extremely unpleasant discovery was related a few days ago to the Kazakhstani people by Ivan Chasnikov, corresponding member of the republic’s Academy of Sciences. It turns out that a significant portion of the territory of Kazakhstan is located in the region of 45 degrees north latitude. What could be bad about this? But,

as Chasnikov believes, this is precisely where the maximum fallout of radionuclides has taken place, not only from the testing of nuclear weapons at the Semipalatinsk range, but at other nuclear test sites as well.

Kazakhstan: Alma-Ata Radioactivity Rumors 'Unfounded'

LD0902153193 Moscow ITAR-TASS World Service in Russian 0810 GMT 9 Feb 93

[By ITAR-TASS correspondent Vladimir Akimov]

[Text] Alma-Ata, 9 Feb—Rumors about the appearance in the Kazakhstan capital of a new source of radioactive contamination which have been worrying many citizens of Alma-Ata have proved upon inspection to be unfounded. This was reported today by the mass media of Alma-Ata, citing the authoritative opinion of the local epidemiology center and the directorate of ecology and bioresources.

Their experts have been to visit the Kazakh radio-engineering works, to which popular rumor had attributed radiation conspiracies against citizens. They discovered nothing that could be the cause of particular concern.

The anxiety of the citizens of Alma-Ata was aroused above all by the presence on the territory of the enterprise of several dozen containers which had once been used for deliveries to the military testing ground near the Saryozek station for the destruction of tactical missiles. They present no danger, however. Measurements have shown that the background radiation in the region of the containers does not exceed 18-20 microroentgens per hour, which is far less than the average natural background in the Kazakhstan capital. The radiation inside is even less - only about 8-12 microroentgens per hour.

BALTIC STATES

Estonia: Prime Minister Visits Paldiski Nuclear Reactor Complex

WS1901131793 Tallinn BNS in English 2108 GMT 18 Jan 93

[Text] Tallinn, 18 January 1993 (BNS)—Russian military authorities on Monday [18 January] first allowed Estonian Prime Minister Mart Laar, Minister Juri Luik and the officials accompanying them to visit a nuclear reactor complex at an ex-Soviet submariner's training centre in the Paldiski military base some 30 km west of Tallinn.

Juri Luik, the minister without portfolio in charge of the negotiations with Russia, called this a "first political breakthrough to the reactor".

The head of the Russian working party for military issues at talks with Estonia, Admiral Gromov, on January 15 said no international nuclear experts would be allowed near the reactor at Paldiski because the reactor is regarded as Russia's military secret.

Environment experts accompanying the prime minister said the radiation background above the reactor had exceeded six, radioactive waste deposit was normal, they added.

The reactor at Paldiski was last in operation in 1989.

The deputy commander of the submariners' training centre, Captain Boris Borisov, told the Estonian leader that the reactor's radioactive uranium rods could be taken out of Estonia by 1994. This, however, wouldn't change the Russian position on the deadline for a final pullout of the reactors. Russia still insists this cannot happen before 1999 for technical reasons. Borisov told Laar the military would start dismantling the reactors already in the near future. After the rank-and-file's leaving the Estonian soil the remaining officers and noncommissioned officers would also fulfill the functions of soldiers.

The prime minister pointed out the necessity to carefully guard the reactor and huge mine depots at Paldiski. He said these important objects should be guarded jointly by Russians and Estonian defence force servicemen until the final pullout of the Russian army.

Laar told reporters the visit had convinced him that the submariners' training at Paldiski had practically ended. Pullout of the training centre is scheduled to start in January. "It's evident that the military are ready to leave the town and will do so at once after a command is given by their superiors," Laar added.

No reporters were allowed to visit the reactor complex on Monday. Russian military officials said a respective permit had been denied to the commander of the base by the Russian Ministry of Defence.

Estonia: International Experts To Check Paldiski Reactors

WS2701131693 Tallinn ETA NEWS BULLETIN in English 1824 GMT 26 Jan 93

[From 26 January RAHVA HAAL, p.1]

[Text] Tuesday, January 26—The work group on nuclear safety of the Council of the Baltic Sea Countries classified the Paldiski reactors as objects needing international experts supervision to assess the level of damage at its meeting in Helsinki on January 21-28, the Foreign Ministry announced. Russian military authorities have failed to present sufficient information about the reactors. The nuclear safety work group reviewed the photographs and video recordings prepared during Premier Laar's recent visit to Paldiski and listened to the explanation of the Estonian representative.

The work group decided to recommend to the Council to form a group of experts with 10 votes against 1. At the request of the Russian representative Russia's position was recorded on the safety of the Paldiski nuclear installations. Estonia has been active in discussing the nuclear problems of Paldiski and Sillamae, the Foreign Ministry press service stressed.

Estonia: Fire Reported at Narva Power Station

WS0802140293 Tallinn BNS in English 1927 GMT 5 Feb 93

[Text] Tallinn, 5 February 1993, BNS—A fire broke out 10:25 local time on Friday [5 February] in a self-supply power transformer at the Baltic power station in Narva, northeast Estonia. The fire was put out by noon. Nobody was hurt in the accident.

Rein Sillamets, head of the safety and labour insurance department at the state company Eesti Energia, told BNS the fire had not forced the station to reduce or break off any of its operations.

"There was a short cut in steam supplies to the consumers of out heat. This operation was resumed by 13:00", he added.

A commission has started work at the power station to find out what had caused the fire.

Latvia: Seventeen Russian Naval Vessels Reported Sunk During Storms

*WS0502140093 Tallinn BNS in English
2059 GMT 2 Feb 93*

[Text] Riga, Feb 02, BNS—Seventeen Russian navy vessels, including five submarines, sank during storms last month in the Russian naval bases in Latvia, reported DIENA.

The Latvian Environment Protection Committee demanded that the Russian navy leadership pay a 5,000 USD fine for not informing Latvian environmental authorities about the sunken ships and the resulting oil spills, a senior official of the Environment Protection Committee told DIENA.

The official, Vaclavs Galanskis, said the committee ordered the Latvian Sea Inspection to clean up the oil slicks, but added that this had not been done due to the lack of equipment.

He admitted, though, that much of the oil had already been washed into the sea during the storm and said it was known how much oil the sunken vessels had leaked.

Galanskis said he had reasons to believe that the ships had been sunk on purpose, although the Russian navy commanders claim the vessels sank because they were in "poor condition" and were no longer used.

It is safer to keep the vessels "at the bottom of the naval port" where they do not have to be guarded, Galanskis said.

The Latvian government refuses to allow Russia to send in additional troops to guard its navy vessels, he said.

Latvia: Government Joins Baltic Sea Environmental Convention

*OW0902223693 Moscow BALTFAX in English
1943 GMT 9 Feb 93*

[Following item transmitted via KYODO]

[Text] Indulis Emsis, head of the Latvian delegation of the Environmental Protection Committee, which was visiting in Helsinki from February 2 through 5, said that Latvia has joined the 1974 Baltic Sea Ecological Protection Convention. During his stay in Helsinki, Mr. Emsis met with his Finnish counterpart Sirpo Pietikainen, and the two parties signed a bilateral protocol of cooperation in the area of environmental protection.

Lithuania: Uranium-235 Smuggled From Udmurtia to Lithuania

*PM0102101593 Moscow ROSSIYSKAYA GAZETA
in Russian 30 Jan 93 First Edition p 7*

[Report by Yuriy Stroganov: "Nuclear Smuggler"]

[Text] Vilnius—What happened on the banks of the reservoir near the "Ekranas" plant in Panevezys is reminiscent of the plot of a fantasy movie. Frogmen, police, people with instruments. They were looking for contraband. But not ordinary contraband. At the bottom of the weir are 5 kg of uranium-235...

Meanwhile, while the frogmen are diving to a depth of 7 meters, investigators are investigating the crime. It has emerged that the uranium was brought in by R. Urbonas from Udmurtia, where it was stolen from a plant in Glazov.

It has long been known that thousands of tonnes of metal are being smuggled out of Russia. And not only on trucks. Not so long ago 2 tonnes of stolen copper were confiscated from a Moscow-Vilnius train. It had reached the point of absurdity: The Baltic republics had become leading exporters of nonferrous metals!

It is true that recently it has become far harder to "force" cars and trucks across the border. But a small suitcase containing metal is more valuable: It is easier to carry across and the "rake-off" is greater. The Russian prosecutor's office still has to discover how the phony merchant got hold of the uranium-235 in Glazov. In Lithuania events developed rapidly.

R. Urbonas, who had thought to earn tens of thousands of dollars for his dangerous cargo, began to seek purchasers. But of the 10 kg of stolen uranium five were simply taken from him. In addition the nuclear smuggler was frightened by a television program on the discovery of a gang of "nuclear" thieves. The luckless rogue hurled his cargo into the river as far out of harm's way as possible.

Lithuania: IAEA Experts To Examine Incidents at Ignalina

*WS0402130493 Vilnius ELTA NEWS BULLETIN
in English 1529 GMT 3 Feb 93*

[From ELTA "NEWS BULLETIN" No. 178]

[Text] 3 February 1993—Experts of the International Atomic Energy Agency [IAEA] from the United States, Canada, France, Sweden, Germany, China, Great Britain, Japan, Finland, Russia and Czechia were at work at the Ignalina atomic energy plant yesterday. The goal of the mission is to examine incidents which occurred at Ignalina during the past three years.

IAEA specialists will review 53 incidents which have been recorded outside the limits of the power station and 119 registered at the plant itself. The most serious of the cases was last year's rift in one of the reactor's pipes, for which the reactor was shut down. However this did not cause a real danger to the safety of the power station.

IAEA experts first visited the Ignalina atomic energy plant in 1989. They offered recommendations to check the safety of the station. Now they will assess how those recommendations were put to use.

FINLAND

Economist Faults Environment Rules for Forestry

93WN0232A Helsinki HELSINGIN SANOMAT
in Finnish 28 Dec 92 p 25

[Guest commentary by Anna-Leena Simula, forest economist employed as a visiting scholar at the Pellervo Institute for Economic Research: "Finland Can Afford to Both Log and Protect Its Forests; Progressive Forest Strategy May Be Only Way To Protect Finnish Paper Sales"]

[Text] *In Anna-Leena Simula's opinion, it is advisable to reduce timber production in privately owned forests when the principles of so-called good forest management and interpretation of the private forest law may be loosely applied.*

Finland meets all the requirements for serving as a pace-setting country in shaping a new natural resources policy for the world. In any case, it is a question of the international forest treaty agreed on in Rio or the forest policy of a Europe in the process of integrating.

First, however, we have to clean the mammoth bones out of our own country's forest policy. Developing a multi-valued natural resources strategy in our country that sets a price on the environment demands creativity and calculations.

Adding to the nation's well-being has been the fundamental purpose behind increasing and improving the growth of our forests through the ages. The private forest law of 1928 required that a logged forest be renewed as well as prohibiting logging that would damage a productive forest. The 1960's and 1970's were a period of timber production programs, the most well-known of which was probably MERA [Forestry Financing Plan].

Timber reserves grew—beyond endurance. Published in 1985, the Forest 2000 program was already looking for ways to increase sales of timber from private forests, which most of the wood that is marketed comes from. Revised last year, the Forest 2000 program tried to increase the competitiveness of the forest industry and the use of wood. There was also concern for the health of the forests.

Forest policy was not, however, redefined, even though the alternative expenditure of investing in forests has increased and citizens' ecological awareness has been aroused. Since foreign consumers buy our wood products on the basis of the images propagated by the Greens, messages involving the logging of virgin forests and failure to protect the forests spread far.

Focusing on Cubic Volume No Longer Works

A forest policy that focuses on timber production had a good chance of succeeding as long as management of our country's economy was closely controlled, authoritarian. When necessary, the forest industry's ability to compete was improved by devaluating our currency. Consensus flourished.

With the freeing of capital markets, the forest industry has more and more eagerly been investing in Central Europe. The reasons have to do with trade and the environment as well as the financing of investments in industry and

Finnish producers' high production costs. About a fourth of the industry's total production capacity is now located abroad.

During the past few years timber purchases have also been concentrated in the hands of a few big industrial companies, as has sawmill capacity as well. Price-fixing agreements for wood sales and the forest tax system based on average yield are coming to an end.

Half of the forest owners live in cities. The relative importance of income derived from the forests in owners' total income has decreased because of the increase in income while at the same time the practice of forest renewal has increased. Economy-conscious forest owners, on the other hand, realize that a stand of trees ready to be logged right now grows more interest in the bank than it does in the forest. While inflation was still galloping, a forest maintained its real value well. Some forest owners are indeed postponing logging to the future in hopes of getting higher stumpage prices.

Then too, throughout the world, emphasis is being increasingly laid on the importance of forests as carbon-fixing agents, preservers of nature's diversity—also referred to as biodiversity.

Forest Bugs Important Too

The forests will serve as the engine of our country's economic growth in the future too since other natural resources are scarce here. The use of wood is, however, increasing slowly since overproduction of cellulose and paper, requirements for recycling fiber, aid for foreign investments, and heavy debts reduce forest companies' investments here in Finland.

With the wood market controlled by the big buyers, timber is not necessarily targeted for its best possible uses either and the amounts purchased are smaller than on competing markets.

In this kind of situation, it is advisable to substantially reduce timber production, at least in privately owned forests. Both so-called good forest management principles and interpretation of the private forest law can be relaxed. Money has its price in a market economy.

However, the notion that timber is only of value when it is sawn or fiberized—a notion that dominates forest policy—is overly centered on Homo sapiens. Now we can afford to intensively both log and protect our forests.

International trade too will soon be conducted in terms of forests' ability to fix carbon, abate noise, and protect species. If the intangible benefits produced by forests were taken into account in the national economy and included in investment calculations, we would see our forests produce multiple well-being as compared with the conventional way of calculating well-being. U.S. Prof. Henry Peskin and Statistics Center "Greens" models for balancing natural resources accounts are worth familiarizing ourselves with.

Time for New Strategy

Now is the time for a new forest strategy. The time to decide how much and in what form it pays for the nation to in future invest in timber production and nature conservation.

Assigning importance to the natural environment of the forest does not mean losses for timber production, on the contrary: As ecology wars increase, a progressive forest strategy may be the only way to protect Finnish wood and paper sales in world markets. Wood is only one element of the forest ecosystem and the forest is only one part of a large biosphere.

Waterways Cleanup Progress Slow

93WN0232B Helsinki HELSINGIN SANOMAT
in Finnish 8 Jan 93 p 9

[Article by Jukka Perttu: "Difficult To Substantially Reduce Nitrogen Pollution of Waterways"]

[Text] It is very difficult to substantially reduce the nitrogen pollutants that end up in Finland's waterways. This was reported at a meeting in Helsinki on Thursday [7 January] at which the interim balance sheet on the program of objectives for the protection of the waterways was presented. The Council of State decided on the waterways protection program on 6 October 1988 and its objectives should be achieved by 1995.

Eutrophying the waterways and adding to the growth of algae, nitrogen pollution has been steadily increasing for 20 years now. Since increasingly fewer phosphorus nutrients have been conveyed into the waterways and since the latter have been eutrophying in spite of that, scientists are beginning to consider nitrogen's role in eutrophication to be an ever greater one.

It is especially difficult to reduce the volume of nitrogen in connection with farming, forestry, and fish farming.

In the interim balance sheet on the water protection program, the authors state that nitrogen pollution from the cultivation of fields will probably not be substantially reduced from its 1987 level before 1995. If winters get warmer because of the greenhouse phenomenon, nitrogen pollution due to farming will, on the contrary, increase.

However, the goal of reducing phosphorus pollution due to the cultivation of fields to a third of its present level will probably be achieved.

Nitrogen pollution due to forestry will probably increase if logging areas are enlarged in accordance with the Forest 2000 program. On the other hand, it is estimated in the interim balance sheet that phosphorus pollution due to forestry will substantially decrease.

The increase in wastewater pollution due to fish farming was halted during the period 1989-91, but pollution will not be significantly reduced in 1992-95 since the only practical way of reducing it would be to reduce production.

"It is very difficult to resolve the problem. Fish farming is the chief source of eutrophication in the [Turku] Archipelago, but, on the other hand, it is an important means of livelihood in the archipelago," Kaj Barlund, the chief of the Water and Environment Authority, thinks.

Industry will have achieved most of the goals it has set itself by 1995. The surprisingly rapid development of the technology that is reducing wastewater pollution has made this success possible.

The paper and pulp industry, for example, has easily achieved its goal of reducing decomposing organic wastewater pollution thanks to investments in processing and sewage treatment plants implemented and completed. This kind of pollution was reduced by 51 percent of the 1987 level by 1991.

The goal of reducing organically bound chlorine discharges was achieved during the last half of the year and reduction of these discharges is still going on.

The limit imposed on paper and pulp industry phosphorus pollution was attained as early as 1991. Pollution was reduced by nearly a third of the 1987 level by 1991.

In the interim balance sheet report, the authors state that the goals set for community wastewater will be successfully achieved on schedule.

Over the past few years a decrease in locally concentrated pollution has also been evident in the condition of the water. The surface area of waterways of adequate or poor quality has been reduced to 2.9 percent. In the mid-1980's they accounted for 3.5 percent.

Nutrient Pollution of Waterways in Finland
(in percent)

Pollution Source	Phosphorus	Nitrogen
Field cultivation	50	48
Stock raising	7	2
Communities	7	23
Fish farming	6	4
Other industries	1	2
Paper and pulp industry	13	7
Other sporadic pollution	16	14

Table does not include naturally leached or airborne pollution.

GERMANY

Problems in Reclaiming Military Sites in East

93MI0125A Wuerzburg UMWELTMAGAZIN
in German No 11 Nov 92 pp 48-49

[Article by Juergen Wiesner, Environment Consultant at the German Society for Chemical Apparatus Engineering, Chemical Engineering, and Biotechnology (Dechema, Frankfurt): "There Is No Panacea—Improved Soil Analysis Essential To Optimize Decontamination"]

[Excerpts] Military sites in the new laender cover around 500,000 hectares, divided more or less equally between the former Soviet forces and the National People's Army and representing an area almost six times as large as the whole of Berlin. The new laender's local authorities would be only too eager to tap this pool of real estate, both for business and industry and for residential areas. There is,

however, a major obstacle: the suspicion that they conceal abandoned toxic wastes, which hangs over these sites like a sword of Damocles. Experts from both the older and the new laender are currently carrying out a rapid inventory of the sites on behalf of the relevant federal ministries: Dr. Joerg Ruppe of the Industrial Plant Operating Company (IABG of Ottobrunn) reported on the stage reached in the preliminary assessment of the former Soviet sites at the first joint environmental symposium held by Dechema (Frankfurt/Main) and the Leipzig-Halle Environment Research Center (UFZ) in Leipzig.

Around 30 percent of the sites have so far been surveyed. Around 3,000 areas were found to be contaminated by rusting fuel depots, scrap metal dumps with open oil slicks, washing ramps for military vehicles with unrestricted seepage, and also concealed underground pollution. Much of this could only be detected by painstaking examination of aerial photographs and onsite "prospecting." There is, however, a hopeful side: Conservative assessments suggest that no more than 5 percent of the total area is likely to be contaminated.

Around half the pollution identified can be classified in chemical terms as mineral oils: aviation gasoline, carburetor fuel, diesel oil, heating oil, and lubricating oil—all substances whose major components are hydrocarbons. If we add the many industrial sites where for years such substances were negligently split, stored, and decanted, then the scale of the task to be faced in reclaiming such sites becomes clear.

Chemists distinguish between short and long-chain, branched and unbranched, and aliphatic and aromatic hydrocarbons, whose behavior underground depends on their composition: Some are highly volatile, others are of low volatility, most are of low solubility in water, some are carried with groundwater below the residual saturation point but bound in the underground pore spaces. The conventional hazard scenario, according to which one liter of mineral oil in the ground pollutes a million liters of groundwater, is fortunately a gross exaggeration, and mineral oil detected in the ground does not automatically represent a hazard. This fact, and the biological degradability of the components of mineral oil, prompted the organizers to propose the detection, assessment, and the reclamation of ground contaminated by mineral oil as the topic for discussion by 300 experts from the older and the new laender.

The key issues discussed were the surveying and logging of suspect sites (chairman: Dr. Fruechtenicht, of Darmstadt/Freiburg); hazard assessment (chairman: Dr. Thein, of Essen); planning use-oriented reclamation (chairman: Dr. Franzius, of Berlin); and experience acquired to date in microbiological decontamination processes (chairman: Dr. Klein, of Essen).

Site-Specific Assessment

It soon became apparent that as far as possible, risk must be assessed and decontamination targets for suspect contaminated sites set in terms of individual sites and their specific assets and ground functions, if unrealistic exaggeration of risk scenarios is to be avoided. Otherwise, the relatively small proportion of suspect sites will become an obstacle to investment for the whole block. Only if the

residual risk is calculable and acceptable will industrial investors be persuaded to build on former polluted sites rather than on green fields. [passage omitted]

Experts from Hamburg's environment authority presented a site-specific method for assessing the hazard potential of oil pollution of groundwater. The crucial element is the assessment of the hydrogeological factors (groundwater sensitivity) and the mobility of mineral oils underground, which depends on the mobility of mineral oils and the permeability of the earth strata.

Mineral oils are retained in the ground up to specific concentrations, and cannot spread "in phase" below what is known as the residual saturation point. Therefore, at lower levels of concentration the groundwater risk potential is limited to the portion that is physically soluble in water. This portion is generally extremely small, especially with long-standing mineral oil contamination. Dr. F. Schwille of Koblenz referred to experience acquired during a Federal Government research program extending over several years in the assessment and treatment of oil pollution cases with reference to water conservation. The first objective of decontamination must therefore be to extract unbound mineral oil, or oil in phase. The oil remaining in the ground can then be sufficiently reduced by decontamination processes, such as biological degradation in situ or in pits, to eliminate any risk of groundwater pollution.

The basic premise must be that biological degradation of hydrocarbons in the ground cannot completely remove all residual content within normal periods of treatment and observation. The extent to which individual substances can be digested by microorganisms depends on the size, structure, concentration, and water solubility of the molecules.

Biological degradation of substances is also subject to the fact that only a part is "exhaled" as carbon dioxide as a result of the microorganisms' energy metabolism, other parts being converted and incorporated into cell substances. This effect is exploited in biological effluent purification in activators by using greater concentrations of bacteria and removing the surplus bacterial sludge. In ground treatment, the bacteria cells remain in the substratum, where they are further metabolized after their death and thus partially incorporated into the humic matter in the soil. The need thus remains for scientific research to improve our understanding of degradation in the ground and the factors affecting it.

Assessing Fingerprints

The still widespread practice of setting decontamination targets at the lowest possible numerical hydrocarbon content value, in line with DIN [German Standards Institute]/ISO H18, poses a problem. This process uses an overall parameter based on the structural elements of carbon-hydrogen bonding in the molecules and derived from water analysis. Related hydrocarbon structures present in natural organic content of the soil (e.g. in the humic matter or weathered sedimentary fossil rocks) and microorganisms cytoplasm require that this parameter be used flexibly in interpreting low hydrocarbon contents in soil. This makes complementary gas-chromatographic fingerprint analysis desirable.

The scope provided by biological processes for cleansing oil-contaminated ground was illustrated in the final discussion chaired by Dr. H. Klein of the Dechema interdisciplinary team on "environmental biotechnology and soil." The fact remains that, despite numerous successful cases of decontamination, there is no panacea. Thorough preliminary inspection and process assessment are a must.

Wismut Uranium Cleanup Costs, Problems Growing

93GE0141B Duesseldorf *HANDELSBLATT* in German
26 Jan 93 p 17

[Article by Frank Matthias Drost: "Sludge Piles Contaminated With Uranium and Arsenic Create Big Problems for Government Enterprise"]

[Text] Chemnitz, 25 January—The rehabilitation of the old ecological burdens caused by the uranium ore producer, Wismut GmbH, from 1948 to 1990 in west Saxony and east Thuringia will considerably exceed DM [German marks] 13 billion, which the Federal Government as owner is making available for a period of 10 years.

In its plans, the Federal Government referred to a 32-square-kilometer area, which at the time of takeover by the Federal Government belonged to Wismut. For further areas used at one time by Wismut, which amount to a multiple of the present holdings, the rehabilitation need has not yet been established. The Federal Government is opposing possible payments.

On behalf of the Federal Office for Radiation Protection, the Society for Reactor Safety investigated a 1,500-square-kilometer area in west Saxony and east Thuringia (aside from the well-documented 32 square kilometers of Wismut) to investigate the extent of "radioactive contamination." At issue in the case of these areas are properties left by uranium ore mining during the postwar years. About 8,000 mining properties—for the most part dumps—were encompassed, reducing the area under suspicion from 1,500 to 250 square kilometers.

Advisory Opinion Interpreted Differently

The Ministries for Environment of Saxony and Thuringia maintain that Wismut and the Federal Government are also responsible for the rehabilitation of former Wismut areas, which by the end of 1982 were released by Wismut for use. The free state in so doing referred to an advisory opinion, which was ordered by the Land Ministry for the Environment and most likely is keeping Bonn busy at this time.

The Federal Government is of the legal opinion that Wismut, as the successor company of SDAG Wismut, is not liable for these areas. After all, the areas were transferred in a lawful manner in accordance with the regulations of GDR law to the municipalities, in the words of the Federal Ministry for Economics. In spite of the unclarified jurisdiction, Wismut members have already tackled the first explorations of the old mining areas. Since there is a total lack of infrastructure, rehabilitation is likely to be very expensive.

The 6,000 Wismut employees are already being well utilized in the rehabilitation of the plant grounds. In 1991 the

plant was tasked to estimate the scope of rehabilitation expenditures. Not an easy time for an enterprise that "almost overnight had to switch from production to rehabilitation," is the judgement of Rolf Graebner, main department chief. A first inventory, presented in August 1991, he said, was of a provisional nature since there was also no complete environmental registry to ascertain the degree of radiation exposure (through radon) and further contamination (among other things, through arsenic).

Of the 3,200 hectares of the Wismut area, waste deposits from mining and waste materials from uranium processing plants account for more than 2,100 hectares. The largest area with 760 hectares is occupied by the Ronneburg mining area in east Thuringia, 150 hectares fall to the share of the uranium mining area in the Erzgebirge, and 40 hectares to the share of the mining area in east Saxony. Wismut also must concern itself with the rehabilitation of the 600 hectares of the processing plant dumps. The open mining area that must be disposed of and safeguarded is estimated at 1,400 kilometers [as published]. More than 50 air shafts must be filled. The 1,400-meter-deep shafts are considered the deepest in Europe.

Wismut expert Manfred Hagen considers a "big problem" the sedimentation basins, which are used for processing uranium ore. All in all, Wismut has at its disposal 12 sedimentation basins, which extend to 600 hectares and contain 160 million cubic meters of sludge. The deposited sludge, which reaches a height of 70 meters and "emits weak radiation," consists of finely ground ore components and heavy metals such as arsenic. Several thousand tonnes of uranium and arsenic are likely still here. A total "tightness" is not given; groundwater does leak out, Hagen confirms.

Canada, too, has to struggle with similar problems. However, while uranium mining there took place in nearly deserted regions, west Saxony and east Thuringia are densely populated. The rehabilitation concept of Wismut, according to Hagen, aims at long-term preservation, which would first of all require draining the large lakes. For these measures, probably the most cost intensive of all Wismut measures, 10 years is estimated. The first experiments with the draining, Hagen indicated, have already begun.

Already completed in all deposits is the so-called "rehabilitation mining," which is to reduce the sinking pressure and thus prevent surface damage. Moreover, according to data provided by Graebner, 50 percent of all mines have been cleared of substances that pollute water, such as explosives, oils, and fats.

Precautionary Measures Have Just Started in the East

Further, according to Graebner, more than half of the "encased sources of radiation," in other words objects extremely contaminated with radiation, are being preserved, in order of importance, in special storage facilities in Thuringia. In Saxony, he said, a corresponding collection center is planned in Radebeul. Finally, dumps have already been partly switched to fill existing holes. Up to now, however, it has not been possible to return areas, Graebner knows.

In 1992 the enterprise had DM968 million at its disposal for its rehabilitation activities, of which only DM900

million could be requisitioned because of missing technical preliminaries. In 1993 the enterprise, with DM773 million, has DM150 million less than planned at its disposal—a result of savings decisions by Bonn. Wismut manager Bergmann proceeds from the assumption that this reduction will not be continued. For 1994 he indicated, they are counting on grants of DM869 million as planned.

The rehabilitation operations of the 6,000 Wismut miners, which are distributed half and half between Saxony and Thuringia, are concentrated primarily on the underground mining sphere. All operations which Wismut cannot carry out itself are advertised for bids, also EC-wide beginning in mid-1993. The share of outside services in the DM773 million budget for this year is figured at about DM120 million by Graebner. Outside firms, for example, prepare expert opinions, assume responsibility for the logistics in connection with the shifting of dumps, dispose of "enclosed sources of radiation," perform demolition work, and plan and project water treatment plants.

SPD Urges Government Ecological Investment Program in Eastern Germany

*LD0502143793 Hamburg DPA in German
1329 GMT 5 Feb 93*

[Excerpt] Bonn (DPA)—The Social Democratic Party [SPD] parliamentary group has called for a "future investment program" for eastern Germany entitled "Ecological Modernization Instead of Unemployment." The federal government is asked to provide 10 billion deutschmarks [DM] per annum for 10 years. In particular, the total amount of DM 100 billion is to go toward improving the drinking water supply, protecting inland waters, trash management, and environmental protection, as well as ecological improvements to the energy supply and the transport network, SPD parliamentarian Rolf Schwanitz said today in Bonn concerning an SPD motion submitted to the bundestag.

Deputy SPD Chairman Oskar Lafontaine regards government participation in eastern German firms as necessary. "If the economy is to have a future in the new Laender, there is no alternative to an economic policy geared toward market principles," Lafontaine wrote in a contribution to the Saturday edition of the LEIPZIG VOLKSZEITUNG. In western Germany, the government has been involved in major companies in the context of rebuilding the economy after the second world war. There is no reason not to do so now in eastern Germany. Lafontaine calls for government guarantees of between three and five years for eastern German Treuhand companies capable of being restructured. [passage omitted]

Return of Hazardous German Waste From Romania Ordered

*LD0602140293 Hamburg DPA in German
0700 GMT 6 Feb 93*

[Text] Bonn (DPA)—Environment Minister Klaus Toepfer has decided to have 425 tonnes of poisonous and hazardous waste that was illegally transported to Romania from Germany shipped back. The Environment Ministry reported in Bonn on Saturday that Toepfer was thereby

assuming the consequences of the refusal of several Federal states to take over the costs of the return. Federal authorities will organize the operation and advance the funds for transport and interim storage in Saxony-Anhalt. At the same time, the minister announced a draft bill to ensure the liability of Federal states in such cases in the future.

Toepfer accused the Federal states of having an attitude of refusal. To head off damage to the Federal Republic's reputation, Federal authorities have decided to make the advance, he said. The reputations of Germany and German industry have already suffered severely from illegal waste shipments to central and eastern Europe, he added.

Controversy Continues Over Brunsbuettel Nuclear Reactor

*AU0902122793 Hamburg ARD Television Network
in German 2130 GMT 8 Feb 93*

[Report by Christoph Luetgert]

[Text] The Brunsbuettel reactor at the Elbe River has been in a cloud of fog for days—which is quite symbolic. After all, many things are unclear in connection with this reactor in southern Schleswig-Holstein. More and more cracks have been discovered in the pipes of the reactor, now totalling 130, despite the fact that, as in other nuclear power plants, austenite steel was used for the piping system, a steel that is allegedly crack-proof. A dogma has been shaken in Brunsbuettel.

Twenty centimeters of a pipe that showed cracks were cut out and should lead to a decision. This piece of pipe, and four others, were sent to a special laboratory in Erlangen of the Siemens subsidiary KWU [Kraftwerksunion]. There should be some light cast on the question whether the cracks developed and grew during operation and are thus an intolerable safety risk, or whether they have always been there, have not changed, and can still be tolerated.

[Begin recording Eberhard Schomer, of KWU] All the tests have so far clearly shown that the cracks had developed in the production process. We have taken five samples which will be further examined in our laboratories. We do not have more samples. But all five samples clearly prove that. On the basis of inter-crystalline tests, microscopy and macroscopy, one can clearly say that the cracks did not grow during operation. [end recording]

If this were definitely true, then the recent fuss about Brunsbuettel would have been exaggerated.

[Begin recording Schleswig-Holstein Energy Minister Guenter Jansen] I deny that. I think that this is an advance strategy, that the company is trying to play things down. We must not tolerate that. [end recording]

The Energy Department of Guenter Jansen's Ministry in Kiel obviously have experts that contradict the nuclear-friendly KWU expertise.

[Begin Jansen recording] I can only advise the KWU to wait until the experts come out with their final position. I know that this is still going to cause enormous controversy. [end recording]

Controversy also arose in Bonn today, when the Reactor Safety Commission discussed the Brunsbuettel cracks on the instructions of Federal Environment Minister Klaus Toepfer—without arriving at a final conclusion.

The next controversy regarding Brunsbuettel is bound to come. The reactor has eight extremely important safety valves, designed to prevent the escape of radioactivity in the event of a reactor incident. It has only now become public that on 6 April 1992 major malfunctions occurred with two of those valves. However, the problems were not reported to the responsible supervisory authorities. The operation of the nuclear power plant simply continued, even though some screws of the valves had become loose or twisted. Brunsbuettel, a reactor that has generated many headlines but little electricity as a result of many incidents, is off the grid. Yet, the tension remains, because opponents and supporters alike claim that the controversy over Brunsbuettel is of strategic importance for the future of nuclear energy in Germany.

SWEDEN

Researcher Details Acid Rain Impact on Forests

93WN0237A Stockholm DAGENS NYHETER
in Swedish 31 Dec 92 p 6

[Article by Ake Lundqvist: "Here Is Found Neither Berry Nor Mushroom; Seriously Ailing Forest in Southern Sweden Is So Thick No Sunlight Gets In"]

[Excerpts] [Passage omitted] On economic grounds, the excellent growth of the fir forest is an occasion for joy. Timber advocates believe the annual tree harvest during the 1990's can increase from 60 to 70 million to 95 million cubic meters.

This can be very significant for the Swedish economy. Despite all the industrial development, the forest is still our biggest income-producing export product. Every year it yields a net contribution of 50 to 60 billion kronor to the Swedish economy. If the harvest can be increased by 50 percent, we will earn an additional 25 to 30 billion. We could use that in times like these.

The Forest Is Ailing

Yet Harald Sverdrup says such calculations are a mistake.

Sverdrup is a forestry researcher in Lund who was our guide through the dark forest. He says that the dark forest is seriously ailing from the effects of sulfur and nitrogen—acid rain. The trees are losing needles and ceasing to grow; they are weakening and are under attack by fungus and insects. If we increase the harvest as much as the timber advocates' report proposes, without simultaneously radically diminishing the sulfur and nitrogen causing acid rain, the last tree in the Swedish forest will be felled by the year 2060.

This is difficult to believe, at least in the beginning. To us, the forest looks just as healthy and green as it ever did.

Yet, Sverdrup has solid figures. He and his colleagues in Lund have studied the southern Swedish fir and pine forest in great detail for many years and have seen how it is losing needles. In 1986, 12 percent of the older firs (over 50 years)

in Skane had lost more than 20 percent of their needles. Five years later, the percentage had doubled to 25 percent.

It was even worse in Halland. In 1986, 25 percent of the firs were already ailing. By 1991, the figure was 50 percent.

For pines, the situation is even more grave. By 1991, 65 percent of the older pines in Skane and 77 percent in Halland had lost 20 percent or more of their needles.

"It is true," Sverdrup said, "that the forest's growth has been very good. But, in part, this is a sign of disease—as in an inflationary economic period when stocks and property values soar without any basis for the rise in value."

It is nitrogen which causes the trees in the forest to grow so quickly.

Ordinarily, nitrogen is scarce in the soil. All trees absorb whatever nitrogen they can find. When emissions from Europe's growing auto traffic filter down into the countryside of southern Sweden, the quantity of nitrogen in the ground increases rapidly and the trees eagerly suck it up.

But trees need more than nitrogen to grow. They need magnesium to change sunlight into energy. They need calcium which makes wood fiber tough and strong. When a nitrogen-saturated tree grows more quickly, it robs the earth of its reserves of magnesium and calcium.

"Before," said Sverdrup, "there was a supply of magnesium and calcium in southern Sweden's soil sufficient for 50 years of normal forest growth. It was as if the trees had a bank account. That account is now empty. There is nothing more to draw upon."

Instead, sulfur accumulates in greater quantities—sulfur which comes from the continent's coal and steel industries. Thus when tree roots search for magnesium and calcium, they find only sulfuric acid and aluminum.

Sulfuric acid releases aluminum in the soil, and aluminum destroys the tree's root fibers and with it, their ability to draw up the substances the tree needs.

"It is like putting trees into automobile batteries," said Sverdrup, who has a talent for finding vivid images.

Then, something will happen that is akin to an inflationary period collapsing suddenly into a depression. Just as suddenly, tree growth will almost entirely cease. The shortage of magnesium will cause the needles to blanch and fall. The lack of calcium will make the wood brittle and weak. The surplus of nitrogen will color tree trunks a mossy green and coat needles with a green plaque that plugs up their pores so they cannot breathe.

Sverdrup demonstrated all this for us. He showed us how our hands become sticky green after stroking a trunk or grabbing hold of the needles on a fir. He pointed out the many threadbare, thin-looking treetops—firs which have lost 60 to 70 percent of their needles. Here and there we could see trees that were completely dead, but not too many.

The Wood Is Soft

"In reality," Sverdrup said, "the situation is worse than it appears. Tree farmers look to see which trees are sick and cut them down before they die, so that any value they have will not be completely lost."

We examined the annual rings in a pile of newly cut timber.

"Here you can see the whole progression," said Sverdrup.

We were able to see how the growth in the first years was even and normal. There followed a number of years with very fast growth, the rings becoming a centimeter wide, some even more. In the last 10 or 15 years, there was almost no growth, the rings so tight that they could hardly be distinguished.

And the wood was soft as cardboard. When we applied a penknife, it sunk almost without resistance into the tree.

This is what the dark interior of Sweden's southern forest looks like. Every year 15 to 25 kilograms of sulfur and an equivalent amount of nitrogen fall on each hectare of land. It is five times as much as the soil can tolerate.

In northern Sweden there is less acid rain, but even here a great deal falls. Here, also, the soil is becoming acidic, though more slowly. What is currently taking place in southern Sweden foreshadows what will happen in the north, if nothing is done to check the pollution.

Clearly, something is being done. But it is going very slowly.

Since 1979, the nations of Europe have been discussing a joint reduction of long-distance cross-border pollution. In 1985, they agreed to reduce sulfur emissions 30 percent by 1993. In 1988, they agreed to reduce nitrogen the same amount by 1998.

Lars Bjorkbom of the National Nature Conservancy Board leads and participates in emissions discussions in Geneva. He believes that the 1993 sulfur emissions goal, to a large extent, will be achieved.

"But this is due partly to the recession. There is a substantial probability that emissions will increase once again when economic conditions improve and industrial production starts to increase."

He doubts that the 1998 nitrogen emissions goal can be achieved. Catalytic converters remove 90 percent of the carbon dioxide from auto emissions, which converts to nitrogen in the southern Swedish soil. However, long-haul traffic, such as air and sea transport, does not use catalytic converters.

"And for the present," said Bjorkbom, "the discussions are going very slowly. East Europe, whose primary concern is to generate heat for homes and energy to keep industry going, has enormous problems. The environment rates third in consideration. West European economies are also hard-pressed and place growth ahead."

"New agreements on further reductions of emissions will certainly come, perhaps as soon as next autumn. Yet, the affected countries will surely have to wait a long time before the agreed-upon goals are met. A rapid improvement is not likely."

If this is the case and Sverdrup and his research colleagues are right, the southern forest of Sweden will die, little by little. And from there, the demise of the forest will begin to migrate northward in stages. [passage omitted]

TURKEY

Foreign Ministry Warns of Dangers of Bosphorous Straits Oil Shipping

TA1102113393 Ankara ANATOLIA in English
0940 GMT 11 Feb 93

[Text] Ankara, Feb 10 (AA)—Turkey on Wednesday warned of the danger of shipping Caucasian crude oil and Central Asian natural gas through the Bosphorus Strait by tanker, saying the potential threat to the environment was far too great to be overlooked.

Foreign Ministry spokeswoman Filiz Dincmen told reporters that alternatively Caucasian oil and Central Asian natural gas should be transported to Europe through pipelines across Turkey.

Technological developments have increased the tonnage and dimensions of vessels plying the strait that links the Black Sea to the Sea of Marmara, seriously increasing traffic volume in the strategic waterway.

An increase in toxic cargoes and the geo-physical structure of the Bosphorus have already increased the chance of a major environmental catastrophe in the busy strait.

Dincmen said transportation of crude oil and natural gas would create an additional burden on the heavy maritime traffic, further increasing the risk of accidents.

Ocean going vessels traverse the strait while passenger ferries dodge in and out carrying scores of thousands of commuters daily between the European and Asian sides of Istanbul, a metropolis of 10 million people.

Dincmen said increased shipments of pollutants would pose a major threat to life and security in Istanbul. "It is primarily a security problem," she said.

The spokeswoman added however that in the event of a major environmental disaster like an oil spillage in the strait, the Bosphorus would have to be closed to traffic.

This, she said, meant that the Turkish straits were not the most secure route for exports of crude oil and natural gas, either for exporting countries or transport companies.

Dincmen added that local and foreign traffic in the Bosphorus would be interrupted during the passage of super tankers, an eventuality which she described as a danger to the principle of freedom of navigation in and passage through the Turkish straits, a traditional bottle-neck for maritime traffic.

Turkey proposes instead to transport crude oil to the West by a pipeline across Turkey with an outlet on the Mediterranean and natural gas via another pipeline across Turkey and Bulgaria.

UNITED KINGDOM

Fertilizer Use May Offset Global Warming

93WN0236A London *THE DAILY TELEGRAPH*
in English 12 Dec 92 p 8

[Article by Toby Moore]

[Text] Farmers using fertilisers may be polluting drinking water but they are unwittingly helping to offset some of the risk of global warming, scientists have found.

The Institute of Terrestrial Ecology says that nitrate fertilisers are making grassland very efficient at soaking up carbon dioxide, the main greenhouse-effect gas, by spurring the growth of vegetation.

Scientists trying to locate the areas taking in the gas produced by industry and car exhausts burning fossil fuels have discovered that enriched grassland is locking up a large amount.

Their future map of carbon sinks, as the areas of natural forces which remove the gas from the atmosphere are

known, will improve understanding of how different land-use policies affect the levels of carbon in the air.

Scientists know that most emissions are being soaked up by the seas and forests. They want to find out what proportion is being removed by other vegetation, particularly important to Britain which has only eight per cent tree cover.

Prof Michael Roberts, director of the institute, said their nitrates discovery followed research in intensively-farmed East Anglia. He stressed it was not a prescription for mass fertilising of the countryside.

"You cannot look at the carbon cycle in isolation," he said. "Between one-quarter and one-third of the acid deposition in this country is coming from nitrogen deposition and that is a very important part of the acid rain story."

Scientists have also announced that Britain's ancient oak woods are doing a better job of soaking up carbon dioxide than conifers.

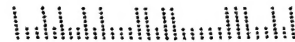
"The problem with our plantations of conifers is that they get chopped down after 50 or 60 years, too young to do any good," said Prof Roberts.

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